



Bulletin

A publication of the VIRGINIA NATIVE PLANT SOCIETY

Conserving wild flowers and wild places

www.vnps.org

Crow's Nest on track to be natural area preserve



The protection of the 3,000-acre Crow's Nest peninsula in eastern Stafford County has been one of the Commonwealth of Virginia's highest land conservation priorities for almost a decade. Bounded by the Potomac and Accokeek Creek, the Crow's Nest property contains 746 acres of tidal and non-tidal wetlands, 2,200 acres of mature coastal hardwood forest (including two forest types that are recognized as globally rare by NatureServe and the Virginia Natural Heritage Program), habitat for about 60 species of neotropical migratory songbirds, nearly 11 miles of shoreline and over 15 miles of stream. Crow's Nest is an ecological jewel located less than 45 miles from downtown Washington, D.C.

In December, after years of unsuc-

cessful negotiations, Stafford County signed a contract with the landowner to acquire 1,780 acres by the end of April, and a second phase to include 1,167 acres by the end of 2009. Thanks to support from the county, the Virginia Department of Conservation and Recreation's Natural Heritage Program, The Nature Conservancy and others, the 19 million dollar funding is in hand for phase one. The funds have not yet been identified for phase two.

Once acquired, the property will be managed by DCR's Natural Heritage Program as a state natural area preserve. If staffing and management funds are identified, the property will be open to the public for passive recreation including hiking, bird watching and nature study in early 2009.

Flora Project moving toward publication date of 2011-2012

Virginia's first contemporary Flora, *Flora of Virginia*, 2011-2012, will give a full list of plants identified in Virginia, a description of each plant (3,650) and illustrations. Preceded 268 years ago by *Flora Virginica* before 1743, it is of significant importance for botanists, students, natural resource managers and teachers who

need to identify, learn about, and locate the plants that are in Virginia.

VNPS members have been a major source of financial support, and that support has been greatly appreciated by the Flora of Virginia Board. Work on the Flora will continue past the book's 2011-2012 publication date. There will be a need for the continued updating of

content including adding new species, new names, and facilitating the *Flora's* expected availability on the internet. In other words, the *Flora of Virginia* publication does not end with a hard-cover book. Once published, there will be more financial support needed in order to keep information current and available.

A special award of financial assistance was given by VNPS John Clayton Chapter to support the essential work by Michael Terry (doing herbarium review and *Poaceae* illustrations) and Bland Crowder, working with Chris (See *Flora Project*, page 6)

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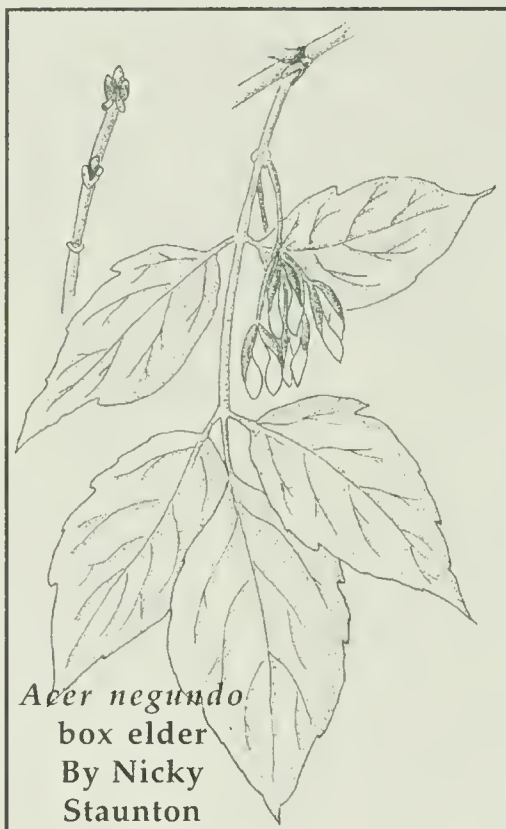
• 2008 Wildflower of the Year
Insert

From the president

Learn to observe native habitats and changes around you

I want to make note of a change in the **Annual Meeting** date for next September from the formerly announced dates to **September 12-14**. We apologize for any inconvenience this causes, and hope those of you who plan to come will be able to do so.

It never fails to amaze me when I go out after a few icy days and find some living thing with very new and fresh looking pieces. I'm going to participate in Project Budburst*, and from the list of plants on the website I chose box-elder, **Acer negundo** because I have several out back of my house. So I thought I'd go out and take a preliminary look at it. It looked like a tree in winter -- buds wrapped up tight. I have a bud collection and I wasn't sure I had a piece of box-elder, so I brought a twig in to take a closer look with a binocular microscope. If you haven't used one of these I highly recommend



it. There are so many things to see! The leaf scar of box-elder is very narrow, and since it is in the maple family and has opposite branching, the leaf scars are right across from each other. In this case, they encircle the twig and several of the keys remark on the point formed where the scars come together. Now, here is the good part: I was looking closely at the scar and found a line of very fresh-looking white hair-like projections interspersed with tiny, stalked red glands. How can these little things survive single digit temperatures and coatings of ice and look brand new?

*Project BudBurst is a national field campaign for citizen scientists designed to engage the public in the collection of important climate change data based on the timing of leafing and flowering of trees and flowers.

**Your president,
Sally Anderson**

Project BudBurst

http://www.windows.ucar.edu/citizen_science/budburst/

Join us in collecting important climate change data on the timing of leafing and flowering in your area through Project BudBurst! This national field campaign targets native tree and flower species across the country. With your help, we will be compiling valuable environmental and climate change information around the United States.

Register Now - Become a member of the Project BudBurst community! This allows you to save your observation sites and plants that you are monitoring throughout the year and for coming years.

Subscribe to the Project BudBurst mailing list to receive updates and announcements about the new features added for 2008. Read about us in the **News**!

Last year's inaugural event drew thousands of people of all ages taking careful observations of the phenological events such as the first bud burst, first leafing, first flower, and seed or fruit dispersal of a diversity of tree and flower species, including weeds and ornamentals. The citizen science observations and records were entered into the BudBurst data base. As a result of the pilot field campaign, useful data was collected in a consistent way across the country so that scientists can use it to learn about the responses of individual plant species to climatic variation locally, regionally, and nationally, and to detect longer-term impacts of climate change by comparing with historical data. Due to the enthusiastic response and robust participation in 2007, the website features for Project BudBurst in 2008 have expanded!

VNPS Volunteers needed

September and our VNPS Annual Meeting may seem far away, but our search for directors to be elected is already under way. Please consider serving the society in one of the following capacities. If you are interested in knowing more about the jobs or have an interest in a particular one, please contact VNPS President Sally Anderson at rccsca@comcast.net.

Available positions are: **First Vice-president; Recording Secretary; Treasurer; Membership Chair; Publications Chair; Publicity Chair; and Director at Large**. Also, membership on the Executive Committee is open for any member of the board of directors. Five to eight members are needed. Details of programs, policy and finance are discussed and recommendations are made to the full board. The Executive Committee meets quarterly in the month prior to the board of directors meeting.

Virginia Wildflower Celebration 2008

The 13 chapters of the Virginia Native Plant Society celebrate the rich diversity of the native flora of the Commonwealth each spring. Society members will share their enthusiasm for wild plants and wild places on field trips and wildflower walks, and during garden tours, plant sales, and a variety of other programs throughout the state.

You are cordially invited to any of the activities listed below; they are all open to the public. As some events require reservations, fees or additional instructions, use the contact information provided to obtain further information. Plants propagated by members will be available at chapter plant sales.

As you travel about the state, watch for the 2008 VNPS Wildflower of the Year, Virginia spiderwort (*Tradescantia virginiana*). It is widespread in the eastern U.S. from New England to Georgia and even west in Minnesota and Missouri. It has been documented in about half of Virginia's counties. Perhaps you can add to that list of documented sites. Spiderwort flowers from April to July.

Wildflower Calendar of Events

South Hampton Roads Chapter meeting and talk - Thursday April 24, 7 p.m. at the Norfolk Botanical Garden, Karen Forget of Lynnhaven River NOW will speak on "Gardening to Save the River." For information call 757-482-9120.

Shenandoah Chapter Annual Plant Sale, Part I - Saturday April 26, Riverfest in Waynesboro, 10 a.m.-2 p.m. Contact Anneli Tattersall at annelitatt@yahoo.com or 540-322-1146.

Buffalo Creek Field Trip - Saturday April 26, 1 p.m. Blue Ridge Wildflower Society trip with leader Sandra Elder to this VNPS Registry Site. See bluebells, dwarf ginseng, walking fern, dwarf iris during some easy walking along a flood plain and wooded hillside. Take U.S. 460 east to Rt. 811 at New London. Turn right onto Rt. 811 at the Sheetz. Follow 811 to Rt. 711 and turn right on 711 for about two miles. Turn left onto Rt. 24, go one mile, cross Buffalo Creek. Parking lot on right. Contact Elder at 434-525-8433.

Jefferson Chapter Annual Native Plant Sale - Sunday April 27, 1 - 3 p.m. at Ivy Creek Natural Area's Educational Bldg., Charlottesville. In conjunction with Natural History Day with other environmental displays. Spring ephemerals including bluebells, trillium, columbine, numerous other perennials, ferns, shrubs, and trees. Located on Earlysville Rd. just south of Woodlands Rd. intersection. 434-293-4217.

Prince William Wildflower Society Garden Tour - Sunday April 27, 12-5 p.m. Visit three gardens and a natural stand of bluebells. Email pwws-vnps@yahoo.com.

Blue Ridge Wildflower Society Meeting - Monday April 28, 7 p.m. at the Roanoke Church of Christ at 2606 Brandon Ave., in Roanoke. Learn about the Virginia Department of Transportation's median and roadside flower plantings.

Shenandoah Chapter Annual Plant Sale, Part 2 - Saturday May 3, Staunton/Augusta Farmers Market in downtown Staunton, 8 a.m.-noon. Contact Anneli Tattersall at annelitatt@yahoo.com or 540-322-1146.

Paul James Garden Field Trip - Saturday May 3, 9 a.m. Blue Ridge Wildflower Society trip led by Jim Bush to this garden known for rhododendrons and azaleas. After the garden, the group will visit the Cahas Knob Registry Site. Meet in parking lots at Lowes in Roanoke on U.S. 220 south of Tanglewood Mall. Bring a lunch. For information, 540-929-4775.

Native Plant Sale at the Norfolk Botanical Garden - Saturday May 10, 9-10 a.m. members preview, 10 a.m.-5 p.m. general public. Regular garden admission rates apply. Contact Nicole Knudson at 757-858-5443.

Blue Ridge Wildflower Society Spring Wildflower Sale - Saturday May 10, 9 a.m.-noon. Located at Virginia Western Community College in parking lot behind arboretum.

Prince William Wildflower Society Plant Sale - Saturday May 10. Email pwws-vnps@yahoo.com.

Wintergreen Spring Wildflower Symposium - Friday-Sunday, May 16-18. Wintergreen Nature Foundation's annual symposium. Instructors for the weekend include well known botanists, authors, and artists, each prepared with a full weekend of activities and lectures that will reconnect you with nature. For info, www.twnf.org.

Potowmack Chapter Native Plant Sale - Saturday May 17, 9 a.m.-3 p.m., at Green Spring Gardens in Alexandria during Spring Garden Day event. With over 40 vendors, Spring Garden Day is the largest plant sale in the Northern Virginia area and a great place for a wide variety of

plants. The Potowmack Chapter will be selling plants from its propagation area behind the Horticultural Center. Discounts for VNPS members. Located at 4603 Green Spring Rd., Alexandria, VA 22312. (www.greenspring.org)

Blue Ridge Wildflower Society Meeting - Monday May 19, 7 p.m. at Roanoke Church of Christ at 2606 Brandon Ave., in Roanoke. Chapter registry site chair Sandra Elder will present a program on registry sites in the chapter's area.

South Hampton Roads Chapter meeting and talk - Thursday May 22, 7 p.m. at the Norfolk Botanical Garden, Chapter member Gail Farley will speak on "The Freedom Lawn is for the B's: Honeybees, ladybugs, butterflies, and the Chesapeake Bay." Call 757-482-9120.

Dedication for the Dorothy Crandall Bliss Botanic Garden - Friday May 30, 5:30-6:30 p.m. at Randolph College in Lynchburg. Bliss is a member of the Blue Ridge Wildflower Society. Take U.S. 460 east to U.S. 29 to Main Street, Main Street to Rivermont Avenue and right onto Norfolk Avenue. Park in open lots and follow signs to botanic garden.

Blister Swamp and Sinks of Gandi - Saturday June 7, Shenandoah Chapter walk with leader Jay Shaner. Contact Chris Bowlen at bowlenchris@comcast.net or Shaner at 540-886-5763.

Rhododendron Day on the Blue Ridge Parkway - Saturday June 7, 8 a.m./10 a.m.. The Blue Ridge Wildflower Society will meet at Peaks of Otter Visitor Center at 8 a.m. for breakfast and 10 a.m. for the event. The group will be "overlook hopping" under the guidance of Rich Crites (540-774-4518). Pack a lunch. Walking will be minimal.

Discover Virginia's plants on a VNPS field trip

The Virginia Native Plant Society announces a series of field trips for 2008 to some of the most botanically interesting preserves the state has to offer. We are making these trips yearly events to allow our members to visit some of our preserves, parks and Registry sites with expert guides.

Trips vary in level of difficulty so please read descriptions carefully. Space is limited and registration is required at least 10 days before the hike. There is a fee of \$10 per hike and a limit of 20 participants. Only heavy rain will cancel

trips. For more information, contact the VNPS office at 540-837-1600 or vnps@shentel.net. This year we are offering the following field trips:

1. Reddish Knob - May 17 (Saturday), 10:30 a.m.-3:30 p.m. Easy to moderate. Reddish Knob, in the George Washington National Forest is one of the highest peaks in the state at 4,398 feet, with sweeping views and mountain flora. Members of the Shenandoah Chapter will lead us on a trip along FR 85 South and the side road that leads up to the peak. Both roads are veritable arboreta and are lined with ferns, heath shrubs and many mountain wildflowers such as turkeybeard, Clintonia, gaywings, painted trillium, black cohosh, dwarf crested iris,

stargrass, and much more. It was at Reddish Knob that former President Clinton delivered remarks at a "Roadless Lands" event in 1999, when the Roadless Rule in the National Forests was being deliberated.

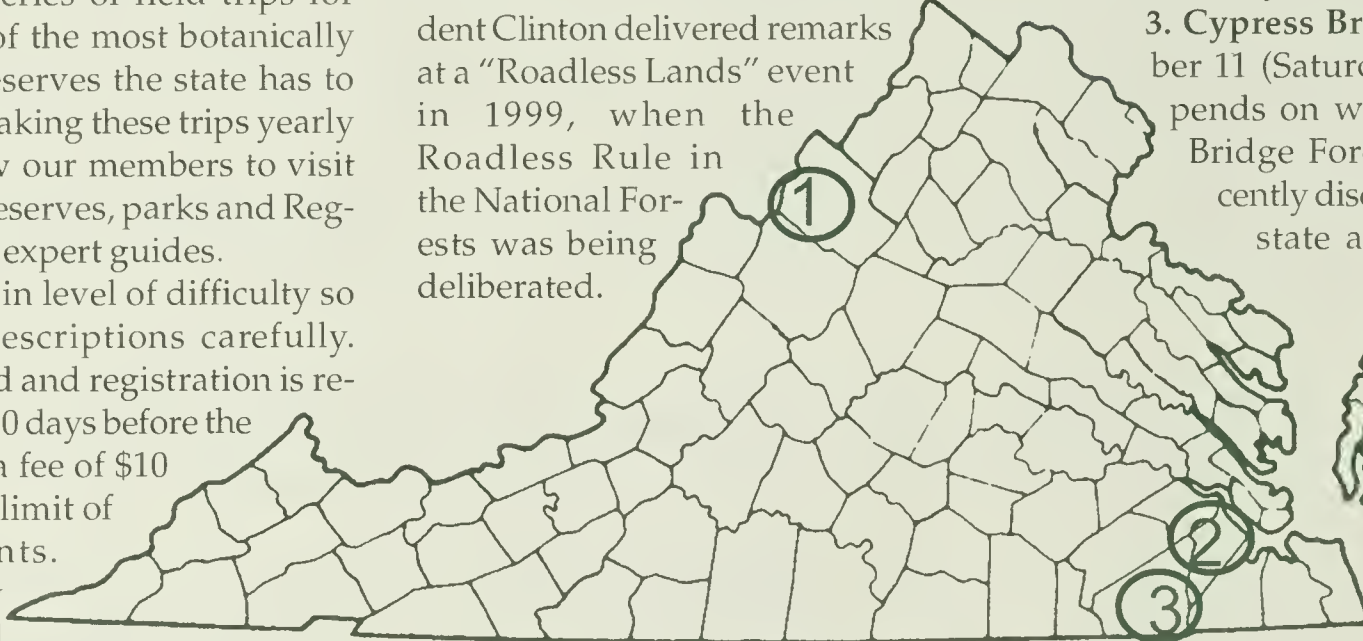
2. Blackwater Ecological Preserve - June 28 (Saturday), 10 a.m.-1 p.m. Easy to moderate. Blackwater Ecological Preserve in Isle of Wight County, with an area of 318 acres, is situated on dry to mesic sand ridges and has two of Virginia's rarest plant communities - longleaf pine-turkey oak flatwoods and longleaf pine savannas. These and other communities at the preserve were once more common in southeastern Virginia, but are now limited to a few precious stands. Preserve Steward Darren Loomis will lead this trip, which will also feature a stop at the Chubb Sandhill Natural Area Preserve's longleaf pine restoration site and a drive through the red cockaded

woodpecker habitat at The Nature Conservancy's Piney Grove Preserve.

3. Cypress Bridge Forest - October 11 (Saturday). Difficulty depends on water level. Cypress Bridge Forest is the fairly recently discovered site of many state and national champion cypress and swamp tupelo trees.

In 2006, Fleming and Patterson reported in our newsletter that at least 12 individual swamp

tupelos, and six individual bald cypress exceeding eight feet in diameter were measured. The largest individuals are between 10 and 12 feet in diameter. All of the large trees are hollow, which appears to be one of the principal reasons this forest has never been cut. Purchase of this land as a Natural Area Preserve is being negotiated. Byron Carmean will lead us on a trip to see these magnificent giants. We hope for low water at this time of year in order to be able to walk among these trees, but will likely need to paddle a short distance to the site. Be prepared for wading and possibly for paddling depending upon conditions at the time. This may therefore be a more difficult trip.



Field Trip Registration

For all hikes, wear sturdy shoes or boots and be prepared for bugs and sun. Bring water and lunch or snacks. Directions and meeting places will be provided to registered participants. Please provide your email address for this purpose, or request directions by mail on the form.

Please mail your registration with your field trip choice(s) and check to:
VNPS FIELD TRIPS, 400 Blandy Farm Lane, Boyce VA 22620.

Name _____

Address _____

City _____ State/ Zip Code _____

Telephone _____ email _____

_____ please mail directions to me

Field trips (\$10 each):

_____ 1. Reddish Knob

_____ 2. Blackwater Ecological Preserve

_____ 3. Cypress Bridge Forest

_____ Total enclosed

Magnolia bogs: keepers of unique flora

Magnolia bogs have long been regarded as one of the most interesting natural features in the Washington, D.C. area. W.L. McAtee, a Washington area naturalist who first defined these bogs in 1918, termed them "magnolia bogs" for the unique assemblage of sweetbay magnolia (*Magnolia virginiana*), sphagnum moss, and other bog flora. Occasionally they are referred to as "McAteean Bogs," after McAtee, or "seepage bogs." These bogs usually form on hillsides or slopes where a spring or seep flows from an upland gravel and sand aquifer over a thick, impervious layer of underlying clay which prevents the downward infiltration of water. This seepage flow and the highly acidic, gravelly soils create optimal conditions for the formation of bogs.

The term "bog" as applied here, although technically a misnomer, has traditionally been used by people in general, including botanists, to describe acidic, sphagnum wetlands that strongly resemble bogs. Magnolia bogs are actually acidic, fen-like seeps uniquely associated with high elevation gravel terraces of the inner coastal plain near the fall line, which divides the coastal plain and piedmont physiographic provinces in the Mid-Atlantic region. Their distribution generally follows the fall line in a narrow east-west band from the Laurel area, at the northern extent of their range in Prince George's County, Maryland, to their southern extent near Fredericksburg, Virginia.

Throughout their range, magnolia bogs were never common or very large, usually occupying an acre or less in size. Nevertheless, they are vitally important resources both for the pure, naturally filtered waters which flow continuously from them -- even in drought periods -- and the relic populations of ancient northward and westward migrations of often rare coastal plain flora, which have persisted in small communities well inland and fairly close to the piedmont. Included in these relic communities are plants

such as bog clubmoss, twisted spikerush, slender beaksedge, bunched beaksedge, hairy umbrella-sedge, darkgreen sedge, bog yelloweyed grass, ten-angled pipewort, smooth winterberry, red milkweed, zigzag bladderwort, and Elliott's goldenrod. Other well-known bogs in Anne Arundel County, Maryland, that are more eastward of the fall line -- such as the extirpated Glen Burnie Bog and the Magothy Bogs -- are not characteristic magnolia bogs, despite some floristic similarities, because of different geological conditions and plant assemblages.

Peatlands, pocosins, fens, and bogs throughout the coastal plain are now extremely rare as a result of habitat disturbance, fire suppression, and fragmentation. Magnolia bogs are also increasingly rare, and surviving ones are degraded throughout their range because of extensive development of the gravel terraces that surround the bogs -- destroying or severely depleting their water supply. Most of the famous ones surveyed by the Smithsonian Institution and W.L. McAtee nearly a century ago, like the Holmead Swamp, Terra Cotta Bog, and Powder Mill bogs, have long been destroyed (although we recently uncovered a small remnant of the latter, along with a small population of ten-angled pipewort). Some, like the Suitland Bog and Oxon Run bogs, have survived, although the Suitland Bog is greatly disturbed with the addition of a boardwalk, numerous outplantings of non-native (to the site) carnivorous pitcher plants that rob valuable habitat for native species, a sewer line, and encroaching housing developments. Urbanization, storm water runoff, siltation, off-road vehicles, and invasive exotic plants have degraded most of the few remaining magnolia bogs and greatly threaten their future survival.

For the past five years, as part of a research project mainly for conservation purposes, we have been conducting an exhaustive search for any remaining magnolia bogs in the re-

Annual Meeting

As an ecosystem unique to the Fall Line, a magnolia bog tour will be offered as a field trip at our Annual Meeting. Please note that the date for the Annual Meeting will be **September 12-14, 2008**. In our last issue we printed a date later in September. We regret the confusion.

gion. All available information regarding the historic magnolia bogs -- going back to the Civil War -- was also researched and documented. We have been aided in these surveys by other botanists with the Maryland Native Plant Society (MNPS), and the preservation of surviving magnolia bogs has become a major campaign of MNPS. Although most of the historic bogs have been destroyed, some new sites have been discovered -- the mostly pristine but threatened Araby Bog is a stellar example.

A dozen magnolia bogs are known to exist today in Maryland, D.C., and Virginia, three of which are in the path of the proposed InterCounty Connector, and several small remnants of historic bogs like the Ammendale and Powder Mill Bogs have been discovered. While most of the rare orchids and lilies have largely disappeared, several very rare plants that had not been seen for many decades -- halberd-leaved greenbrier, low rough aster, and Long's rush, for example -- have been rediscovered. Several previously unreported plants for Maryland -- including featherbristle beak sedge (*Rhynchospora oligantha*) -- have also turned up.

By Roderick Simmons and Mark Strong. Article was first published in *Audubon Naturalist News*, October, 2002 and has been reprinted here with permission. *Audubon Naturalist News* is a publication of the Audubon Naturalist Society. Simmons is a field ecologist with the city of Alexandria; Strong a botanist with the Smithsonian Institution. They expect to publish their research on coastal plain magnolia bogs soon.

Students test eradication techniques for garlic mustard

I am a teacher at the Mountain Vista Governor's School, a special high school program for advanced math and science students that draws attendees from seven school districts. The school is located at the two Lord Fairfax Community College campuses in Warrenton and Middletown. One of the goals of our school is to promote student research. My environmental science class at the Warrenton Campus, while studying biodiversity and the issue of invasive aliens, conducted a project on the eradication of garlic mustard. Since I am a member of the VNPS, I thought that their findings might be of interest to other members.

Clelia LaMonica

Common garlic mustard, also known as poor man's mustard, jack-in-the-bush, and mustard root, is a biennial introduced into North America in the 1860s as a culinary herb. Today it is considered an invasive alien, spreading easily into undisturbed plant communities. One such proliferation has been noted in the G. Richard Thompson Wildlife Management Center in northern Fauquier County, Virginia. This area, a registry site of the Virginia Native Plant Society, is known for its large population of *Trillium grandiflorum*. In recent years the trillium habitat has been infested by the garlic mustard. Efforts to eradicate the garlic mustard have con-

centrated on hand pulling, which is time consuming and labor intensive.

A different method of eradication that has been suggested is mowing. If the plant is repeatedly mowed during the growing season, it cannot flower and spread. This is obviously impractical in an area such as the Thompson Center where mowing in the growing season would seriously disturb the very plants that are being preserved. During the winter, however, the native lilies and orchids, such as the trillium and lady's slipper species, are dormant, while the winter rosette of the garlic mustard is above ground, and could be selectively removed.

This experiment was designed to test the efficacy of mowing the winter rosette as a deterrent to its growth. Garlic mustard rosettes of various sizes were dug from a somewhat disturbed wooded edge. These were then planted in containers filled with potting soil. The planters were placed in windows on the north side of a building and were watered regularly throughout the two months for which the experiment was conducted. Cutting with scissors modeled the mowing process. The leaves and stems of the experimental group were cut back to soil level every ten days for thirty days. The plants were then allowed to continue growing for another ten days and compared.

In both the control group and the

experimental group, approximately one-third of the plants died, while the remaining two-thirds continued to grow. The average size of the control group plants was larger, but the experimental group plants continued producing leaves, even after three clippings.

Mowing the winter rosettes, then, would not seem to be an effective method of eliminating the garlic mustard plants. The clipping process did not significantly affect the mortality rate of the plants studied; approximately one-third of the plants in both groups died, probably due to uneven watering or irregular planting. While the experimental group plants were smaller, they were alive and growing. Possibly different results would be obtained if the experiment was conducted under cold temperatures to better model the winter conditions, but at the present time hand pulling appears to be the only effective and ecologically sound method of removing the garlic mustard.

If this subject interests you, visit the following websites to learn more.

<http://dnr.metrokc.gov/wlr/lands/weeds/pdf/Garlic-Mustard-Control.pdf>

<http://www.vnps.org/conservation/registry.htm#sites>

<http://www.nps.gov/plants/ALIEN/fact/alpe1.htm>

Article by Mountain Vista Governor's School Environmental Science Class

• Flora Project

(Continued from page 1)

Ludwig with various support assistance. They joined the Flora production team during the past year to help reach the targeted publication date.

Right now, to insure meeting the 2011 publication date of the *Flora of Virginia*, financial support by VNPS members is important. The name of donors to the *Flora of Virginia* will appear in the first edition list of "Subscribers." A gift up to \$1,000 is listed in the "Spring Beauty" category. Small gifts are accumulative and can move the donor to the next level of subscription to the project.

A recent generous gift at the Great Laurel level (\$10,000) was given as a memorial for a loved one who loved

wildflowers. I can imagine botanists in the future, say in the year 2277, reading through the list of subscribers and noting how very important Virginia flora was to those people. Memorials are an impressive legacy.

If any project deserves VNPS financial support, it is the *Flora of Virginia*, the key single source of information to support conservation of our native plants and their habitats. Knowledge about plants increases appreciation and the desire to protect them. Visit www.floraofvirginia.org for more information.

Nicky Staunton, VNPS member of the FOVP Board of Directors

27th REPORT ON PRODUCTION of
The *Flora of Virginia* 1st Edition:
Alan Weakley family treatments –

completed 155 of 200 family treatments. 78 percent (Co-editor)

Literature accounts – completed.

Herbarium work – 1,950 of 3,650 species 53 percent (review of specimens)

Chris Ludwig review – 1,600 of 3,650 44 percent (Co-Editor)

John Townsend review – 650 of 3,650 18 percent (Co-Editor)

Lara Gastinger, Michael Terry: Illustrations – 1,100 of 1,200

Glossary – Bland Crowder – nearly completed.

Chapter on history of botany – Nancy Hugo, Donna Ware start April 15

Chapter on natural history – Gary Fleming

Gary Fleming - ecology

Alan Weakley Family Key and final review

Discover the Kansas prairie from the past

Deep in the heart of the Kansas Flint Hills there is a place that is dedicated to preserving and interpreting the natural history and the ranching legacy of the tallgrass prairie. This place, called Tallgrass Prairie National Preserve, is two miles north of Strong City in Chase County. Fortunately for us all, the Tallgrass Preserve is open to the public year round to learn about and enjoy our natural and cultural heritage. For native plant enthusiasts there are 10,894 acres of rolling hills and open prairie. The Tallgrass Preserve's vascular plant list documents nearly 500 species of grasses, trees, and wildflowers. With miles of hiking trails the hard part is deciding which route to take first. Be sure to pick up a plant checklist before heading out.

On an early spring walk you might see the tiny wedgeleaf draba (*Draba cuneifolia*) with white flowers on wiry stems or field pussytoes (*Antennaria neglecta*). Not only does the pussytoes' inflorescence look like the soft pads of a cat's foot, but part of the flower reminds people of insect antenna, thus the scientific name. If you have a sharp eye, in mid-April you might

find the limestone adder's tongue (*Ophioglossum engelmannii*). This is an unpretentious little plant closely related to ferns. Its oval leaves are most easily spotted on open ground where the prairie has been burned. Pincushion cactus (*Coryphantha missouriensis*) is found on rocky hilltops, and their glossy, dazzling red fruits will persist until early spring. The pinchushion's yellow flowers are produced in May.

The scenery is continually changing. As the season progresses, tufts of lotus milk-vetch (*Astragalus lotiflorus*) come into flower with mounds of violet-blue blossoms. The waving heads of silktop prairie clover (*Dalea aurea*) have a silvery inflorescence with a ring of yellow flowers. In early summer colorful prairie clovers (*Dalea* spp.), cat-claw sensitive briar (*Mimosa quadrivalvis*), foxglove penstemon (*Penstemon cobaea*), butterflyweed (*Asclepias tuberosa*) and many more are blooming on the South Wind Hiking Trail. Standing two to five feet tall with large, parallel-veined, smooth and ovate basal leaves, In-

dian plantain (*Arnoglossum plantagineum*) has white tubular florets in broad, flat-topped clusters. The glowing pink-violet flowers of the fineleaf foxglove (*Tomanthera densiflora*) are a contrast to its stiff and bristly leaves.

Some interesting grasses to look for are wedgegrass (*Sphenopholis obtusata*), Florida paspalum (*Paspalum floridanum*), prairie dropseed (*Sporobolus heterolepis*), and red sprangletop (*Leptochloa filiformis*). Take the Lowland Trail and you may see anise root (*Osmorhiza longistylis*), Maryland figwort (*Scrophularia marilandica*), American bellflower (*Campanula americana*), or hairy sunflower (*Helianthus hirsutus*) at the woodlands edge.

During late September and into October, lady's tresses orchids (*Spiranthes*) can be found along the prairie trails. Two species of lady's tresses bloom in the fall, but a third species, the tallest and most delicate, *S. vernalis*, flowers in July. Of course, fall is the time for grasses. Big bluestem (*Andropogon gerardii*), In- (See Kansas, page 8)

See the address label for your membership expiration date VNPS Membership/Renewal Form

Name(s) _____

Address _____

City _____ State _____ Zip _____

___ Individual \$30

___ Student \$15

___ Family \$40

___ Associate (groups) \$40*

___ Patron \$50

___ Sustaining \$100

___ Life \$500

*Please designate one person as delegate for Associate membership

To give a gift membership or join additional chapters: Enclose dues, name, address, and chapter (non-voting memberships in any other than your primary chapter are \$5)

I wish to make an additional contribution to ___ VNPS or _____ Chapter in the amount of ___ \$10 ___ \$25 ___ \$50 ___ \$100 ___ \$(Other) _____

___ Check if you do not wish your name to be listed to be exchanged with similar organizations in a chapter directory

Make check payable to VNPS and mail to:

VNPS Membership Chair, Blandy Experimental Farm, 400 Blandy Farm Lane, Unit 2, Boyce, VA 22620

Membership dues are tax deductible in the amount they exceed \$5. Contributions are tax deductible in accordance with IRS regulations.

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Nancy Sorrells, Editor

Original material contained in the *Bulletin* may be reprinted, provided credit is given to VNPS and the author, if named. Readers are invited to send letters, news items, or original articles for the editor's consideration. Items should be typed, on disk in Microsoft Word or e-mailed to: Editor, 3419 Cold Springs Rd., Greenville, VA 24440, or lotswife@comcast.net. The deadline for the next issue is April 30

•Kansas

(Continued from page 7))

dian grass (*Sorghastrum nutans*), and switchgrass (*Panicum virgatum*) stand four to six feet tall with waving seed heads. The preserve is home to 71 species of grasses and 28 species of sedges and rushes.

Riparian forests line two of the major creeks that flow through the preserve. The forest was present along these creeks at the time of the original government surveys in 1856. Some interesting herbaceous forest species include green dragon (*Arisaema dracontium*), sweet-scented bedstraw (*Galium triflorum*), Tennessee bladder fern (*Cystopteris tennesseensis*), and American beakgrain (*Diarrhena americana*). In the springtime before the trees have their full set of new leaves, those who take the county road that crosses Fox Creek may spot the great blue heron rookery in the top of one large, old sycamore (*Platanus occidentalis*). Common along Fox Creek are bur oaks (*Quercus macrocarpa*), some estimated to be nearly 300 years old. The largest bur oak at the preserve has a circumference of 17 feet, 5 inches.

Springs and wet areas are abun-

dant at Tallgrass Preserve. Wetland plants are especially showy in autumn. Intensely luminous yellow patches of coreopsis beggar-ticks (*Bidens polylepis*) cover large seep areas on the hillsides and can be seen from the Red House Hiking Trail. It is also spectacular to see masses of cardinal flower (*Lobelia cardinalis*) and narrow-leaf gerardia (*Agalinis tenuifolia*) blooming side by side in prairie draws.

The Tallgrass Prairie National Preserve is a very new addition to the National Park Service. The preserve was established by an act of Congress in 1996. Management continues to evolve, and little by little more areas are returned to their historic condition and opened to visitation. Someday soon there will be American bison roaming on the preserve prairie.

VNPS will visit the Tallgrass Prairie National Preserve and other sites during the week of May 31 to June 7. There are a few spots left on the trip. If you are interested in getting more trip details, contact Helen Hamilton at helen44@earthlink.net or 757-564-4494 or see our website, www.vnps.org.

Iralee Barnard

Kansas City Native Plant Society

Water lettuce threatens submerged vegetation

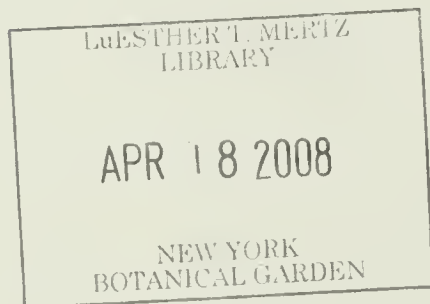
Add water lettuce (*Pistia stratiotes*) to the list of invasives that threaten Virginia's native ecosystems. These floating plants, which usually die off in the winter, could threaten the freshwater submerged aquatic vegetation that is so vital to the health of the country's east coast rivers. The plant was found in the Potomac last year and researchers worry that the plant could be capable of returning and becoming established through seeds deposited on the river bottoms. The group monitoring the situation in the Potomac is the Freshwater Submerged Aquatic Vegetation Partnership that is coordinated by the Chesapeake Research Council. If you find water lettuce on any of the Commonwealth's rivers this year, please report the finding to the Interstate Commission on the Potomac River Basin at info@icprb.org.

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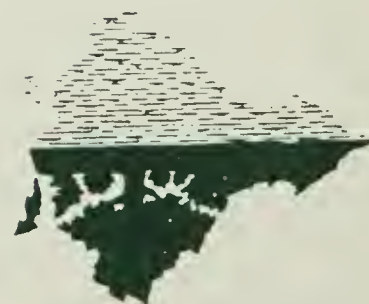
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Bulletin

A publication of the VIRGINIA NATIVE PLANT SOCIETY

www.vnps.org

Conserving wild flowers and wild places

The Potomac Gorge

Unmatched diversity at Annual Meeting

Gary Fleming, the vegetation ecologist with Virginia's Natural Heritage Program, stood on a rocky ledge high above the Great Falls of the Potomac River explaining the globally imperiled riverside prairie, one of over 30 plant communities of the Potomac Gorge. Not far away a National Park Service interpretive sign quoted Gary about the gorge: "In more than 25 years of fieldwork I have not seen another site of this size with comparable diversity of land forms, plants, and natural communities."

The Potomac Gorge encompasses a 15-mile stretch from the piedmont province above Great Falls to the coastal plain at Georgetown, where the Potomac River

drops down through the bedrock. It was created when the sea level dropped during the Pleistocene period, between 1.8 million and 11,000 years ago. As the

river cut lower and lower, it left numerous bedrock terraces along the sides. The river has also migrated to the south over geological time and continually

carved away at the Virginia side, creating an almost continuous line of steep bluffs and cliffs. Unlike most eastern rivers its size, the Potomac has no high dams and it is powerful enough to completely obliterate and then recreate floodplain habitats. It has fostered the dispersal and migration of plants over several physiographic provinces creating rich and diverse plant communities. Furthermore, much of the gorge has been protected on both sides of the river by federal and local



Great Falls is a geologic highlight of the Potomac Gorge (Photo by Nancy Sorrells)

(See Potomac Gorge, page 6)

Spiderworts: Not just another pretty face for science

Species of *Tradescantia*, or spiderworts, are handsome plants. Several wild species, including the VNPS wildflower of the Year for 2008 (*T. virginiana*), can be found in eastern North America and additional species grace gardens, and hothouse

conservatories. Spiderworts are not, however, just a bunch of pretty faces. Spiderworts have a long history of service to science, both in terms of teaching and pure research.

Several hothouse species of spiderwort have a creeping habit, for ex-

ample, *T. fluminensis*, *T. sillamontana*, *T. pallida* (formerly *Setcreasea pallida*), and *T. zebrina* (formerly *Zebrina pendula*). Each of these frost-sensitive species is commonly grown in hanging pots. They also

(See Spiderwort science, page 5)

INSIDE: VNPS Annual meeting information and registration form

From the president

Learn to observe native habitats and changes around you

Hello VNPSers,

This has really been a beautiful spring, even if a little cool early on, and an exciting time for native plants. We have another new registry site, the newly dedicated Merrimac Farm Wildlife Management Area in Prince William County. Prince William Chapter president Charles Smith and chapter member Nancy Velhrs worked hard to produce the documents needed in time for a dedication ceremony that took place on April 10. The dedication was followed by a tour of the gorgeous blnebells along Cedar Run. The site also contains a diverse upland forest. On May 1, Phase I of Crow's Nest in Stafford County was dedicated in a ceremony that included our governor and other dignitaries. A tour of the area following the dedication featured showy orchis. Negotiations are under way for the purchase of Phase II, in order to protect the whole peninsula.

Closer to home, my home anyway, was the dedication of the wildflower trail at the G. Richard Thompson Wildlife Management Area to Marjorie Arndel, conservationist and mother of our long time member Jocelyn Sladen. This site was the first to be registered under our program, in 1990. The beautiful Sunday afternoon ceremony featured millions of *Trillium grandiflorum* for which the site is known.

Just recently, the first state field trip to Reddish Knob took place. This high mountain west of Harrisonburg has a 360-degree view and a great diversity of plants along the way to the top. Thanks much to the members of the Shenandoah Chapter for hosting this trip and



Red elderberry at the summitt of Reddish Knob. (Photo by Sally Anderson)

showing us a brilliant array that included mountain fetterbush in profusion, birds foot violets, wild lupine, gay wings, painted trillium and much more. In the midst of a very rainy week the weather was perfect.

So, what more could there be? Well, by the time you read this we will have taken the VNPS 2008 trip to see the tallgrass prairies in Kansas. Then on June 28 there will be a state tour to Blackwater Ecological Preserve. The fall annual meeting hosted by the Potowmack Chapter should be another great opportunity to see lots of beautiful habitat - yes even in Northern Virginia we have lots of very special places and plants, and I know the chapter will put on a fun meeting. I hope to see YOU there.

Your President, Sally Anderson

Saving Crow's Nest

The special Virginia habitat known as Crow's Nest is now Virginia's newest Natural Area Preserve. The dedication of Phase I of the preserve took place on May 1. Virginia Governor Tim Kaine spoke at the ceremony. The second phase of the Crow's Nest project will preserve the remainder of the peninsula, and the purchase of that tract of land is currently being negotiated. The photo at right shows Hal Wiggins, right, member of Fredericksburg Area Chapter, being presented with an award for his work to save Crow's Nest. Standing with him is Johnny Mitchell. The new Natural Area Preserve will be under the control of Virginia's Natural Heritage Program.



Bluebells usher in Merrimac Farm dedication

Merrimac Farm, a more than 300-acre property in Prince William County near Nokesville, is the newest addition to the Virginia Department of Game and Inland Fisheries' (VDGIF) statewide network of wildlife management areas. The land features diverse wildlife habitats - wetlands, hardwood forest and upland meadows - as well as access to Cedar Run.

Merrimac Farm was formally dedicated on April 10 amidst the dazzling spring display of Virginia bluebells. The site boasts one of the largest single patches of Virginia bluebells in northern Virginia. With Merrimac Farm WMA, the VDGIF expands its statewide network of WMAs to 37 with well over 200,000 acres statewide. During the ceremony, the farm also became the newest Registry listing for the Virginia Native Plant Society. With Merrimac Farm there are now 19 VNPS Registry sites. The primary requirement for eligibility is that the site have regional or state significance because of its native plants. Significant sites may exhibit an exemplary occurrence of a habitat, a plant community, or a plant species. Sites may include an unusual, persisting variation of a plant species, or an assemblage of species. Or the site may exhibit some quality with the unique potential to inspire community awareness.

The property was recently acquired by the VDGIF with support from the Prince William Conservation Alliance, Marine Corps Base Quantico, and the McDowell family (who owned the property). Virginia Secretary of Natural Resources L. Preston Bryant, Jr. said of the acquisition, "Merrimac Farm is an excellent example of how partnering organizations can use the Virginia Land Conservation Foundation grants to protect important habitat. This project contributes to Governor Kaine's goal of conserving 400,000 acres by the time he leaves office. Achieving that goal will not only protect our land and water for wild-

life but also improve the quality of life for all Virginians."

The acquisition of Merrimac Farm presented a unique opportunity to protect forested wetlands and vernal pools, some of the most threatened habitat in the United States, in one of the fastest growing communities in the country. The proximity to highly urban populations makes Merrimac Farm an ideal place for the more than 2 million northern Virginia residents to participate in wildlife-related recreation and education. Plans for

the site include special managed hunts, fishing, wildlife viewing areas, and environmental education programs. VDGIF will use this site to demonstrate wildlife management principles and practices in an urban/suburban setting which will hopefully serve as a model for other public lands in northern Virginia. To protect the integrity of the property as well as to minimize user conflicts and negative impact on habitat, Merrimac Farm WMA will have some restrictions. Horseback and bicycle riding, use of all-terrain vehicles, dog walking and jogging will be prohibited.

In addition to protecting wildlife habitat for such species as bobwhite quail, songbirds, waterfowl, deer, fox, rabbits, frogs and salamanders, the establishment of Merrimac Farm WMA - with its one

mile of frontage on Cedar Run - will protect this important watershed and enhance restoration of the Chesapeake Bay. Cedar Run flows into Occoquan River, a tributary of the Potomac River. Protecting the wetlands along Cedar Run will also



VNPS 2nd vice-president Nicky Staunton (left) and VNPS president Sally Anderson present VDGIF Executive Director Bob Duncan with a registry plaque on April 10, 2008, at the Merrimac Farms WMA dedication. (Photo courtesy Lee Walker, *Virginia Wildlife Magazine*)

promote better water quality for northern Virginia. Occoquan Reservoir provides drinking water to more than 1.2 million people who reside in Prince William, Fairfax, Fauquier, Loudoun and Stafford counties.

Previously the property had been managed as part of a shooting preserve, resulting in excellent wildlife habitat. Merrimac Farm WMA is adjacent to Quantico, a 59,000-acre Marine Corps Base, forming an impressive contiguous tract of wildlife habitat. The U.S. Marine Corps' involvement in the acquisition is part of a federal program to work with state and local agencies, conservation organizations, and willing landowners to protect the mission integrity of military installations by establishing an easement that will act as a buffer area

(See *Merrimac Farm*, page 8)

Virginia Native Plant Society Slate of Candidates

The following slate of candidates is proposed by the 2008 VNPS Nominating Committee to replace officers, standing committee chairs, directors-at-large, and members-at-large of the Nominating Committee, and to fill existing vacancies in other classes. Please note that there are a number of open seats that need to be filled by enthusiastic volunteers. Please consider giving of your time and talents for the special plants and habitats in our Commonwealth.

FIRST VICE-PRESIDENT - Nicky Staunton (2008-2011) is a Charter VNPS member, three-time VNPS President, board member since our founding in 1982, and serves on the board of the Flora of Virginia Project. Now living in Culpeper, she holds chapter memberships in Prince William Wildflower Society, Jefferson Chapter and the Piedmont Chapter, where she is a board member. She is a committed advocate of preserving Virginia's native flora and habitats. Nicky is also a freelance illustrator.

TREASURER - Cathy Mayes (2008-2011) joined VNPS's Potowmack Chapter many years ago and transferred to the Piedmont Chapter when she left as in-house counsel at Sallie Mae and moved to Fauquier County. Her special interest is in preserving the most precious wild places in Virginia and around the world. In addition to serving as treasurer of the Piedmont chapter, she was the first chair and currently serves as secretary of Old Rag Master Naturalists based in Madison; is a vice president of the Virginia Chapter of the American Chestnut Foundation; and is active in community organizations. She maintains an international consulting practice in higher education finance and has an interest in an organic dairy.

CONSERVATION CHAIR - Mary Ann Lawler (2008-2011) has been an active member of the Virginia Native Plant Society since 1999. She has been newsletter editor for the Potowmack Chapter since 2001. She is involved in many environmental issues in Arlington County, promoting the protection of native flora and the control of invasive exotic plants. She is on the county's Urban Forestry Commission. She has also been on the board of the Mid-Atlantic Exotic Pest Plant Council. Mary Ann retired after 34 years with the U.S. Department of the Interior, where she was the Departmental Budget Director for five years.

HORTICULTURE CHAIR - For the past nine years, Kim Strader (2008-2011) has worked as curatorial assistant with the State Arboretum of Virginia at U.Va.'s Blandy Experimental Farm in Clarke County. Her position involves working with volunteers in the gardens, keeping plant records, producing labels for the 8,000+ plants in the collection and drafting interpretive signs. In 2007, Kim became the curatorial assistant for the arboretum's Nancy Larrick Crosby Native Plant

Trail that includes woodland, wetland and meadow. Previous employment includes horticultural experience at a golf course and for a landscape company. She has an associates degree from Northern Virginia Community College and was an intern at Fern Valley in the U.S. National Arboretum and at the American Horticultural Society's River Farm. Kim currently serves on the Volunteer Opportunities Committee of the Daughter for the Stars Master Naturalist Chapter.

REGISTRY CO-CHAIRS - John Dodge (2008-2011) is a resident of Annandale and a long-time VNPS member. He received a masters degree from George Mason University, where he studied botany under Ted Bradley. He continues to pursue flora inventory work and works in the herbarium there. He helped the National Park Service on Prince William Forest Park flora. **od Simmons (2008-2011)** is registry chair for the Potowmack Chapter. He is immediate past president of the Botanical Society of Washington, is active in the Maryland Native Plant Society and edits the journal *Marilandica*. He works for the city of Alexandria as a plant ecologist in the parks planning division. This is the second term as Registry Co-chair for both John and Rod.

EDUCATION CHAIR - Shirley Gay (2008-2011) is a member and program chair of the Potowmack Chapter. Also a long time member of the state board, this will be her third term as Education Chair. During this time she has organized the VNPS Annual Workshops and started a yearly series of state field trips. She also serves on the board's Executive Committee. Shirley is a retired math teacher, and is actively involved with Peace Camp.

DIRECTOR-AT-LARGE (2008-2011) - Kathi Mestayer has been an enthusiastic student of native plants and habitat for several years. She joined VNPS in 2003 and is also a member of MA-EPPC and is a recently-certified Master Naturalist. She organized a Landscaping With Nature class this spring. Her yard is a National Wildlife Federation Habitat. She consults with environmental utilities (water, wastewater, solid waste) on management issues for a living.

OPEN - PUBLICITY CHAIR; MEMBERSHIP CHAIR; PUBLICATIONS CHAIR; SECOND VICE-PRESIDENT; 2009 NOMINATING COMMITTEE (One Year Term)

You can email your PROXY VOTE to: vnpsofc@shentel.net

PROXY, 2008 VNPS ANNUAL MEETING

I hereby authorize the Corresponding Secretary to cast my vote for the slate of candidates proposed by the Nominating Committee

Signed _____

Address _____

Return by September 5 to:
Corresponding Secretary, VNPS
Blandy Experimental Farm
400 Blandy Farm Lane, Unit 2
Boyce, VA 22620

PROXY, 2008 VNPS ANNUAL MEETING

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Signed _____

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Corresponding Secretary, VNPS
Blandy Experimental Farm
400 Blandy Farm Lane, Unit 2
Boyce, VA 22620

Virginia Native Plant Society 2008 Annual Meeting

September 12-14, Alexandria, VA

"The Potowmack Experience: Flora along the Fall Line"

The 2008 VNPS Annual Meeting will focus on the diversity of plant communities along our national river, the Potomac. The Potowmack Chapter lies in the fall line region, where the Piedmont meets the Coastal Plain. Despite our area's urbanization, spectacular local and national parks line the river and protect dramatic falls, fascinating geologic features, meadows, bogs, and marshes - all along a surprisingly short section of the river. During the weekend, we've lined up a variety of field trips to some outstanding natural areas, gardens, and herbaria. On Friday evening, enjoy a dessert reception followed by a presentation. Saturday night features the annual meeting, a buffet dinner, and our keynote speaker. We hope you will join us.

Accommodations: Rooms are being held until Friday, August 22 at the Courtyard by Marriott, Alexandria Pentagon South, 4641 Kenmore Ave., Alexandria, VA 22304; \$99/2 beds/night plus tax and \$10 parking fee. Call (703) 751-4510 and mention VNPS Annual Meeting. Other local hotels include the Comfort Inn (703) 642-3422, Econo Lodge (703) 979-4100 and Best Western (703) 979-4400. *Field trips will leave across the street from the Marriott and it is the banquet location; we encourage you to stay there.*

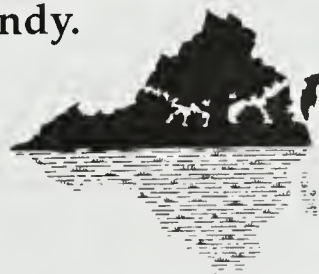
Directions to the Marriott: From the south: Traveling on I-95, take I-395 north toward Washington, D.C. Take Exit 5, East (King Street, Rte. 7). Make first right on Menokin Drive then turn right on Van Dorn Street. Travel one mile, turn left on Kenmore Avenue.

From west: Take I-66 east to Falls Church, exit at Route 7 and head east (right). It's 8 miles to Menokin Drive. Turn right, then right on Van Dorn St. Travel one mile, turn left at Kenmore Ave.

Directions to Green Spring Gardens: From the south or north: From I-395, take Exit 3B (Little River Turnpike West, Rte 236). Go 1.25 miles, then turn right on Braddock Road. Stay in the right hand lane and turn right onto Witch Hazel Road, the entrance to Green Spring. Go right at the stop sign to the Horticulture Center.

From the west: From I-495, take Exit 52B (Little River Turnpike East, Rte 236). Travel 3.5 miles, turn left on Braddock Road. Follow directions above.

For maps, information on restaurants and links to field trip sites, visit www.vnps.org or contact the state VNPS office at Blandy.



Friday Schedule

Registration & Friday events at **Green Spring Gardens**, 4603 Green Spring Rd., Alexandria, VA 22312

1-5 p.m. Registration

& 6:30-8 p.m. Registration

2-5 p.m. Plant sales at Potowmack Chapter propagation beds. Proceeds donated to VNPS.

7-8 p.m. Dessert reception and social hour; also a book and plant sale to benefit VNPS.

8-9 p.m. **Friday Evening Program: Notable Natural Areas and Flora of the Northern Virginia Region.** By Rod Simmons, plant ecologist and VNPS Registry Chair

Friday field trips

1. **George Mason University Herbarium**, Tours at 2, 3, and 4 p.m. Join herbarium director, Dr. Andrea Weeks, for a tour of the Ted R. Bradley Herbarium on the campus of George Mason University. This research facility houses over 60,000 dried and pressed plant specimens, including a synoptic collection of Northern Virginia flora used by students, scientists, and natural resource professionals as a reference collection for ongoing floristics projects. Gain insight into archival specimen preparation, curation, and how the "business" of taxonomic work gets done! (Directions to herbarium will be sent with registration confirmation).
2. **Turkeycock Run Stream Valley Park**, 2-5 p.m. Visit an upland Oak-Heath Forest at one of the highest points in Fairfax County. Terrace Gravel Forests are old-age communities characterized by gravelly soils deposited as glacial outwash from the ancestral Potomac River. See heath species, oaks, hickories and remnant American chestnut as well as some fall wildflowers. Led by Rod Simmons, plant ecologist and VNPS Registry Site chair. Meet at Green Spring Gardens. Moderate
3. **Native Plant Garden tour, Green Spring Gardens**, 3-5 p.m. The Virginia Native Plant Garden demonstration area features a diversity of showy natives from many regions of Virginia. These natives perform well in garden settings of naturalistic designs to more traditional mixed border, perennial border, shrub border, and rock wall settings. There is also a remnant Magnolia Bog in the garden area. Led by Green Spring plant curator and horticulturist Brenda Skarpohl. Easy

Saturday field trips

All trips start at 8:30 a.m. from the parking lot behind Francis C. Hammond Middle School, 4646 Seminary Rd, Alexandria, VA 22304 across from the Marriott. Enter parking lot by turning right off Seminary Rd. at Pickett St. Turn right on Pegram St. to the parking lot.

1. **Riverbend Park**: Morning kayak trip and afternoon plant walk. Explore the fascinating interaction between geology, geography and plants along the Potomac. Aquatic and riverine plants and geologic features explored by kayak; floodplain and upland forest featured in the afternoon. \$30 extra for kayak rental fee includes life jackets and paddles. Led by Martha Slover, geography instructor, George Mason University and VNPS board member. Moderate
2. **Great Falls National Park**: Explore bedrock terrace habitats along Mather Gorge. Focus on rare, natural communities such as the Piedmont/Central Appalachian Riverside Outcrop Prairie and the Potomac Gorge Riverside Outcrop Barrens. Late summer species in flower include Indian grass, big bluestem, western sunflower, tall coreopsis, and riverside goldenrod. Extensive rocky shoreline scour zone habitats may be explored. Leaders: Cris Fleming, field ecologist and Maryland Native Plant Society president and Gary Fleming, vegetation ecologist, Division of Natural Heritage. Moderate
3. **Mount Vernon Historic Site**: For the native plant lover with a history interest: Walk through extensive upland and lowland forests behind the scenes at George Washington's historic Mt. Vernon on the banks of the Potomac. Focus on native trees and shrubs in the wild and those selected by General Washington to landscape the grounds of his home. In the last hour-and-a-half, tour the mansion, outbuildings, formal gardens, threshing barn, demonstration farm, and museum. Led by Dr. Elizabeth Wells, botany professor at George Washington University who specializes in native and naturalized plants of the east coast and early floristics records in 18th-century Virginia. Extra \$11 reduced rate entrance fee. Easy to moderate
4. **Chain Bridge Flats**: See flood-scoured Piedmont bedrock-terrace habitat with unusual flora and vegetation, including several Midwestern disjuncts or range-limit populations, such as prairie redroot, big bluestem, shingle oak, wild blue indigo, and rock grape, as well as various Appalachian, Piedmont, and Coastal Plain species. Slow hiking pace in the rugged terrain of the Flats, easy return on the C&O Canal towpath, about 2-3 miles each way. Trip leader, Dr. Larry Morse, served as Chief Botanist of The Nature Conservancy and as North American Botanist for NatureServe. Moderate to difficult
5. **Occoquan Bay National Wildlife Refuge**: Focus on early autumn meadow plants, birds and butterflies in diverse wildlife habitat valued for its upland meadows and wetlands on Occoquan Bay. A botanical survey by Nicky Staunton and Elaine Haug found 699 plant species. Other surveys found 74 butterfly species and 59 dragonfly species. Butterfly tagging demonstration during lunch. Bring binoculars, hat, sun-screen, insect-repellant. Led by Nicky Staunton, Flora of Virginia Project board member and past president, VNPS, and Elaine Haug, Information Manager, Smithsonian Botany Department. Easy

6. Huntley Meadows Park: This 1,500-acre park is set in a coastal plain lowland created by an ancient meander of the Potomac River. Boardwalks and trails wind through freshwater marshes, shrub swamps, forests and meadows. Morning exploration of wetland with a rich variety of fall bloomers likely, such as white turtlehead and climbing hempweed and many dragonflies and birds as well. After lunch and a look at the park herbarium, explore the park's spectacular meadows where tickseed sunflower, purple gerardia, grasses, sunflowers, and many varieties of goldenrod will be out in full force. Led by Karla Jamir, Huntley Meadow's herbarium coordinator and certified naturalist. Easy

7. Gardens of Washington, D.C.: Bill McLaughlin, Curator of the U.S. Botanic Garden will lead a tour of the National Garden. The garden features species from both Piedmont and Coastal plain habitats that impart the distinctive character of our flora, while emphasizing the garden-worthiness of those plants familiar and unfamiliar to horticulture. An exhibit garden on rainscaping is also at the Botanic Gardens. Next, visit the beautiful, native landscape gardens of the National Museum of the American Indian. After lunch, explore the Smithsonian's Butterfly Garden with an option to visit the Natural History Museum's new Butterfly Exhibit. Easy

8. Suitland Bog, Maryland: Visit one of the most diverse of the surviving Fall Line Terrace Gravel Magnolia Bogs. These bog-like wetlands, while technically spring-fed fens, were once common throughout the Fall Line in the greater Washington, D.C. area, but are now globally rare. Sweetbay magnolia, poison sumac, dangleberry, red milkweed, rough aster and many other characteristic bog species will be seen. Led by Mark Strong, taxonomic botanist with the Smithsonian Institution. Half-day trip. Easy

9. Travilah Serpentine Barrens, Maryland: The only example in our region of the globally rare forested serpentine barrens community and the largest site of its kind in the Mid-Atlantic region. These communities are underlain by ultramafic rock which produces a soil that can inhibit plant growth. The plant community is characterized by "flatwoods" of oaks, hickories, shortleaf pine, grassy glades and plants such as Leonard's skullcap and wild crabapple. Field trip continues at Blockhouse Point, a rugged forested area with disjunct montane species such as shagbark hickory, white pine, table mountain pine and cucumber magnolia. Led by Carole Bergmann, forest ecologist with Maryland National Capital Park and Planning Commission. Moderate

10. Barcroft Magnolia Bog and Terrace Gravel Forest: A half-day walk with a naturalist in and around Arlington's most significant natural plant community. Magnolia Bogs are globally-rare (G1) wetlands and this one was first described by W. L. McAtee in the early 20th century. Participants will observe a floristically unique patchwork of wooded seeps, a remnant acidic seepage swamp (S3), and the terrace gravel forest that produced the wetlands. Led by Greg Zell, Arlington County Chief Naturalist. Half-day trip. Moderate

Saturday evening

Social hour/Buffer/Annual Meeting and Guest Speaker

Courtyard by Marriott, Alexandria Pentagon South, 4641 Kenmore Ave., Alexandria, VA

6-7 p.m. Social hour and cash bar

7-8 p.m. Buffet

8 p.m. **Keynote Presentation:** *Whither Potomac Wildness? Proximal to both the Coastal Plain and Piedmont provinces, the tidal-Potomac watershed below the Fall Line retains remnants of an impressive biodiversity once sustained by extensive forestlands. Even as we commemorate lingering examples bequeathed us by history, such as Tidal-Freshwater Marshes, regionally endemic Magnolia Bogs, and pockets of Shell-Marl Forest, the need for conservation looms lest we pass along little in the face of spreading urbanization.*

Keynote Speaker: Jim Long is coordinator of the Mattawoman Watershed Society and has been involved in southern Maryland and Potomac River conservation issues for many years. A Ph.D. physicist by training, he has assisted in field studies of Mattawoman Creek and its watershed, including botanical surveys and freshwater mussel assessments, and has led assays of habitat usage by migratory fish. Dr. Long has held numerous Maryland Scientific Collecting Permits, is a longtime, active member of the Maryland Native Plant Society, and was recently awarded the Conservationist of the Year award by the Southern Maryland Audubon Society.

Sunday Schedule

VNPS Board Meeting, Long Branch Nature Center 9:30 a.m.-12:30 p.m.

Field trips are scheduled from 9 a.m.-1 p.m.

1. **Great Falls Park:** This 800-acre national park is located at the Fall Line of the Potomac River where the Piedmont and Coastal Plain meet and offers participants an opportunity to explore a wide variety of habitats and view colorful and sometimes rare native plants in bloom such as the riverbank goldenrod. Trip led by Marion Lobstein, associate professor of botany at Northern Virginia Community College and Joe Metzger, Maryland Native Plant Society field trip leader.

2. **Turkey Run Park:** Plant and Geology Walk. Experience a mature forest with pockets of "old-growth" trees over 200 years old including the largest specimens recorded in the Potomac Gorge of sugar maple, tulip poplar, white oak, and American beech. Also see floodplain and upland forests, deep ravines, streams, and rocky bluffs at this key Potomac Gorge site, with interesting geologic features. Led by Rod Simmons, plant ecologist and Tony Fleming, geologist, formerly with the USGS.

3. **Barcroft Magnolia Bog:** See Saturday trips, number 10.

Registration Form

"The Potowmack Experience: Flora along the Fall Line"

Virginia Native Plant Society 2008 Annual Meeting

September 12-14, Alexandria, VA

Name _____ Phone Number _____

Street _____ City, State, Zip _____

Email _____

Signature ** _____ **(required)**

****Signatures required on all registrations.** By signing this form the above registrant shall hold harmless the Virginia Native Plant Society, including its staff and volunteers and those designated to serve as their provider.

* * * * *

Registration closes on August 30. Please register early, as space is limited

Registration FEE: \$90

Additional FEES: Kayak Trip \$30

Mt. Vernon admission \$11

Donation to VNPS _____

TOTAL Amount Enclosed: _____

FIELD TRIP CHOICES

Friday Herbarium, visit time (circle one): 2 p.m. 3 p.m. 4 p.m.

Saturday Fieldtrips:

First Choice: _____

Second Choice _____

Sunday Fieldtrips:

First Choice: _____

Second Choice _____

For information
Contact VNPS office
manager Karen York at
540-837-1600 or
vnpsoc@shentel.net

Saturday Box Lunch (circle one): Non-vegetarian Vegetarian

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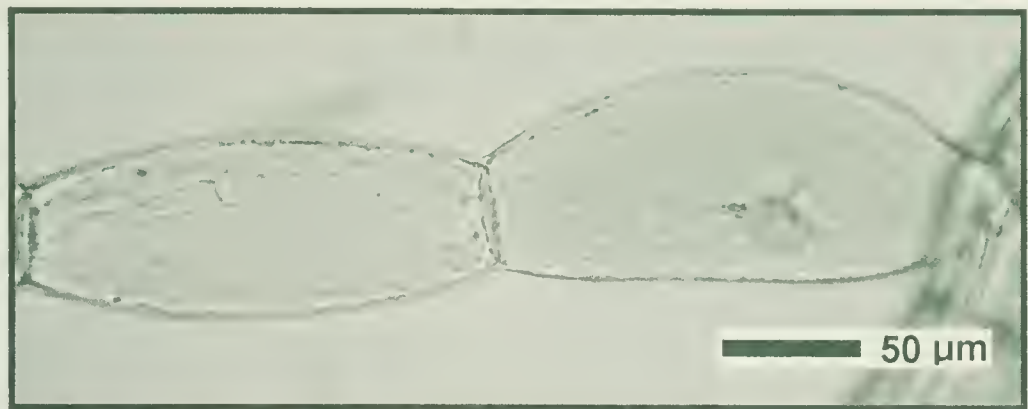


Figure 1 (left) shows the lower epidermis of a *Tradescantia pallida* leaf with stoma. Figure 2 shows two *Tradescantia pallida* cells at the base of stamen hair. When this photographic was taken, granules in the cytoplasm strands were moving in a streaming circulation throughout the cell; most of the volume of these cells is occupied by a watery bag, the vacuole.

• Spiderwort science

(Continued from page 1)

readily form adventitious roots at each node and, as a result, they constitute excellent material with which to demonstrate vegetative propagation (asexual reproduction). Stem tip cuttings about three or four inches in length, with a few lower leaves removed, will in a matter of a week or two, strike root in moist sand, in perlite, or even in a glass of water. For students new to botany, cloning one's own plants for the first time can be a valuable and motivating lesson in the ways of plants.

For more advanced classes, spiderworts are good subjects for microscopic study. Leaves are often somewhat succulent, so they can be torn to yield thin sheets of epidermal cells that, when mounted in a drop of water on a glass slide, reveal basic aspects of plant cell structure, including cell walls, the nucleus, and large watery vacuoles. And scattered among the ordinary epidermal cells, one can easily find stomates, the adjustable pores that control both photosynthesis and water loss (figure 1). Flowering spiderworts allow for even easier microscopic preparations: a wet mount of a single stamen, plucked from any open flower with fine forceps, yields hundreds of cells linked together, much like a string of pearls; these chains of cells are the stamen hairs characteristic of all *Tradescantia* species. With high power, the living cytoplasm of stamen hair cells can usually be seen in motion,

streaming vigorously through the cell (figure 2). Few subjects convey dynamic aspects of cell structure better.

Of course, the same characteristics that make spiderworts useful teaching tools are also beneficial in the research lab. *Tradescantia* stamen hairs have frequently been used in experimental studies of cell division. The stamen hairs grow in buds before the flowers open by a series of successive cell divisions, which form the chains up to 30 cells long. Most dividing cells will be found at the tip of the growing hair. Unlike other plant tissues with many dividing cells (for example stem or root tips), stamen hair cells are easily exposed as nearly isolated cells, not buried among a three dimensional mass of non-dividing cells. Consequently, both observation and manipulation are facilitated. The dividing cells can easily be bathed in chemical solutions or, with the right equipment, experimental molecules can be micro-injected directly into the cell to test their impact on the division process.

Spiderworts also have an extensive history of use in monitoring the effects of mutagens, substances that cause changes in the structure of DNA. For these studies, one particular spiderwort hybrid, a cross between smooth spiderwort (*T. ohiensis*) and prairie spiderwort (*T. occidentalis*), has been used most often. One particular clone resulting from this cross contains two forms of a gene that controls flower color. One (dominant) form of the gene results in blue pig-

mentation whereas the other (recessive) form yields pink. The value of these plants is that mutation in the blue form of the gene generally results in loss of ability to make that color. So, when this blue-flowered plant is exposed to a mutagen, any cell that suddenly makes pink pigment rather than blue indicates that at least one mutation event happened in that cell. In essence, the scientists simply count pink spots in petals or count the presence of pink stamen hair cells among the blue ones as a means of quantifying the effects of the mutagenic substance being tested. This spiderwort mutation monitoring system has been used to study the effects of radiation, and many different chemicals, including air pollution. In fact, decades ago these spiderwort hybrids were intentionally exposed to atomic bomb blasts as part of the government's efforts to understand the power unleashed in nuclear reactions.

Our last example of spiderwort science relates to kinder and gentler themes. In the 1930s many scientists were engaged in an effort to unite the basic framework of evolutionary theory expounded by Darwin with newer developments in population genetics and ecology. The result came to be known as the "modern synthesis." One key development brought out in this era was clarification of the role of natural hybridization in evolution and speciation. Natural hybrids of spiderworts, especially hybrids involving *T. virginiana*, *T.*

(See Spiderworts, page 8)

•Potomac Gorge

(Continued from page 1)

public ownership. As a result the National Park Service and the Nature Conservancy consider it one of the most biologically significant natural areas in the East.

A drive along the George Washington Memorial Parkway on the Virginia side along the Potomac from below Great Falls Park to Georgetown overlooks the river through pleasant scenic woodlands, much of which has not been cut since the Civil War or even longer. But these are not just any woodlands overlooking a river. Scientists, including Fleming, have identified over 30 distinct plant communities in the Potomac Gorge, ranging from typical mixed hardwood forests, to boulderfield forests and woodlands, to unique and rare riverside barrens and prairies. The gorge has more than 1,400 different plant species, including 400 occurrences of 200 rare plants and natural communities. Three of its plant communities can be found nowhere else in the world.

Areas up and down the gorge are an attraction for botanists. From season to season an amazing variety of plants is on display. This article will focus on those areas mostly on the Virginia side, which will be featured during this fall's VNPS annual meeting.

Within the calm floodplains of the Piedmont in Fairfax County's **Riverbend Park** above the Great Falls, springtime visitors can see harbinger of spring (*Erigenia bulbosa*), ramps (*Allium tricoccum*), white trout lily (*Erythronium americanum*), sessile trillium (*Trillium sessile*), and numerous other ephemerals under an abundance of paw-paw (*Asimina triloba*). In summer they can find among others: Deptford pink (*Dianthus armeria*), butterfly weed (*Asclepias tuberosa*), fringed loosestrife (*Lysimachia ciliata*), American germander (*Teucrium canadense*), and sweet-scented Indian plantain (*Cacalia suaveolens*), which is rare in Virginia.

Great Falls National Park has not only the powerful 60-foot waterfall vista, but several distinct plant communities within its 800 acres including several

forest communities in the uplands and bottomlands, a swamp, rocky bluffs and cliffs, bedrock terraces, and the rugged ravine at **Difficult Run**.

The plant communities nearer the river below Great Falls are of significant conservation concern. On flats along the rocky rim of the terrace are two rare forest communities that are scoured periodically by catastrophic floods. First is the Riverside Bedrock Terrace Pine Woodland, which is known only from the Potomac Gorge in Virginia and Maryland and the New River Gorge in West Virginia. It is dominated by the Virginia or scrub pine (*Pinus virginiana*) with eastern red cedar (*Juniperus virginiana* var. *virginiana*), stunted oaks, and various shrubs. Second, the Potomac River Bedrock Terrace Oak-Hickory Forest is endemic to the Potomac Gorge. Nowhere else in the world can be found this combination of post oaks (*Quercus stellata*), fringetrees (*Chionanthus virginicus*), hop trees (*Ptelea trifoliata*), and downy arrow-wood (*Viburnum rafinesquianum*) as well as characteristic grasses and sedges such as eastern needlegrass (*Piptochaetium avenaceum*), Bosc's panic grass (*Dichanthelium boscii*), Pennsylvania sedge (*Carex pennsylvanica*), and soft panic grass (*Dichanthelium laxiflorum*).

On the exposed rocks in the lower portions of the bedrock terrace; the gorge rim, and the river channel shelf are two other plant communities that both rank G1 and S1. One is the Central Appalachian/Piedmont Riverside Prairie. This plant community contains prairie species such as big bluestem (*Andropogon gerardii*), narrowleaf mountain-mint (*Pycnanthemum tenuifolium*), and dense blazing-star (*Liatris spicata*). The wild blue indigo (*Baptisia australis*) and Indian-grass



Gary Fleming botanizes in the Potomac Gorge

(*Sorghastrum nutans*) are two other diagnostic species of this community type.

The other community is the Potomac Gorge riverside outcrop barren, which is very xeric, exposed and frequently scoured. This community contains sparse vegetation, with a few low shrubs and herbs occupying crevices and small soil or moss mats. A dwarfed form of the fetterbush (*Leucothoe racemosa*) is the most characteristic shrub. The two most numerous and characteristic herbs in this type are the little bluestem (*Schizachyrium scoparium*), stiff aster (*Ionactis linariifolius*) and the sticky goldenrod (*Solidago racemosa*), which is not known outside the Potomac Gorge in either Virginia or Maryland. This community type is considered globally rare and is endemic to the Potomac.

In the middle section of the Potomac Gorge, the north-facing river bluffs in **Scotts Run Nature Preserve** and **Turkey Run Park** contain large intrusions of basic igneous rocks that weather into soils with a higher silt content and higher calcium and magnesium levels than other upland soils in the gorge. The highly mesic and fertile ravines and lower slopes of these bluffs support a Basic Mesic Forest. This community has an herb layer dominated largely by spring ephemerals. Two of the most abundant herbs are blue cohosh (*Caulophyllum thalictroides*) and harbinger-of-spring (*Erigenia bulbosa*). This community has a mixed overstory of sugar maple (*Acer saccharum*), beech (*See Annual Meeting, page 7*)

• Annual Meeting

(Continued from page 6)

(*Fagus grandifolia*), tulip poplar (*Liriodendron tulipifera*), basswood (*Tilia americana* var. *americana*), white ash (*Fraxinus americana*), and bitternut hickory (*Carya cordiformis*), with abundant paw-paw and spicebush (*Lindera benzoin*) in the understory. The community has a distinctive herbaceous layer containing many species not found in other upland forests of the area. Two of the locally abundant, and most diagnostic, are twinleaf (*Jeffersonia diphylla*) and toadshade trillium (*Trillium sessile*). In spring Turkey Run Park also has a wonderful show of Virginia bluebells (*Mertensia virginica*), Dutchman's breeches, and squirrel corn.

Turkey Run Park also contains very steep riverfront areas with huge boulders and other rocks that have broken off from bedrock outcroppings. They support a distinctive forest community (Central Appalachian/Piedmont Rich Boulderfield Forest) of plants able to root deeply in the soils between the rocks.

Sugar maple, basswood and white ash are the principal trees, usually forming open stands that are subject to frequent windthrows because of difficult rooting conditions. Bladdernut (*Staphylea trifolia*) is usually the most abundant and diagnostic shrub. Pale jewelweed (*Impatiens pallida*) is especially well

adapted to these habitats and covers some boulderfields in the late summer.

Scott's Run itself has such a variety of soils and conditions that it supports a great diversity of plant life. One survey found 175 species of plants in bloom from March to June as well as 20 species of fern.

One floristically diverse plant community is found especially on **Chain Bridge Flats**. It is the Central Appalachian/Piedmont Bedrock Floodplain Woodland, a mixed deciduous woodland of several floodplain trees that occupies the active channel shelf in areas dominated by bedrock outcrops. It has pockets of deep soil deposition, depressed channels, and small pools. The trees in this community are very susceptible to uprooting and mechanical damage, which keeps it open. The combination of variable microhabitats, good light, and very fertile soils fosters incredible species richness, which may be endemic to the Potomac Gorge drainage. Chain Bridge Flats also contains examples of the rare riverside prairie mentioned above.

Down river closer to Georgetown are Arlington County's **Gulf Branch Nature Area** and **Potomac Overlook Regional Park** both of which have trails down to the Potomac and both of which have protected a wide variety of native flora that can be seen through all the

seasons. Access to these parks is through local streets.

Lastly, the Potomac Gorge ends on the coastal plain with **Theodore Roosevelt Island**, a memorial to one of our great conservation presidents. The island contains an upland forest, swamp forest/floodplain, and tidal marsh. Nearly 50 tree species have been identified on the island, including tulip poplar, beech, hickory, and several species of oak with willow, ash, and sycamore in the wetter areas. In addition to the trees, other woody vegetation includes spicebush and poison ivy. Approximately 275 herbaceous plant species have been identified on the island. The island is close to Memorial Bridge and the Lincoln Memorial and has bicycle access all the way down to Mount Vernon at the end of the GW Parkway. Access to the park is from the northbound lanes of the parkway.

While it is impossible to provide a full length discussion of all the plant communities and species of the Potomac Gorge flora, we hope that these descriptions whet your appetite enough for you to come to the annual meeting and see for yourself the botanical richness the area has to offer, in spite of its very urban setting.

Much of this article is based on Gary Fleming's narrative accompanying his presentation on the *Vegetative Ecology of the Potomac Gorge*.

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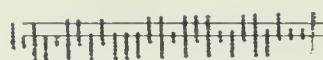
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•Merrimac Farm

(Continued from page 3)

outside the installation's existing border to protect against incompatible development that could impact current or future military operations occurring within the current installation boundaries, as well as to support local land conservation efforts. Merrimac Farm is the first acquisition of its kind in the Commonwealth of Virginia.

"This partnership not only allows us to continue our mission of training Marines, but also lets the local community enjoy important Virginia habitat

in its natural state," said Quantico Base Commander Colonel Charles Dallachie. "We are happy to partner with the Commonwealth of Virginia and the Prince William Conservation Alliance to honor the wishes of the McDowell family and protect this land from development. I look forward to other opportunities with willing partners for compatible land use efforts on all sides of the base."

Merrimac Farm was originally owned by Col. Dean McDowell, who purchased the property after World War II and whose untimely death in

2002 put his property at risk of development. The continued support of Col. McDowell's heirs and their commitment to the preservation of Merrimac Farm for public uses has been instrumental to the success of this five-year effort. Gail McDowell said, "Our family is committed to conservation. We are delighted that the property will be protected and available to the public."

For the complete list of state-owned WMAs, visit the WMA section of the VDGIF website at <http://www.dgif.virginia.gov/wmas/>.

•Spiderworts

(Continued from page 5)

ohiensis, and *T. subaspera*, were studied at this time by Edgar Anderson and Robert Woodson of the Missouri Botanical Garden. Anderson, in particular, working with spiderwort hybrids, developed something called the hybrid index, a method to quantify the relative contribution of different parents in the genetic makeup of hybrid offspring. Building on these early studies with spiderworts, Anderson extended his observations

to other groups of naturally hybridizing plants (e.g., *Iris* species) and, eventually, he published his most famous work, *Introgressive Hybridization* in 1949; this book includes a thorough analysis of how genes can flow from populations of one species through hybrids into populations of another species. Anderson's work with spiderwort hybrids is commemorated in the name *Tradescantia x andersoniana*, the name applied to what is now a common group of gar-

den hybrids combining the genetic characters of Virginia spiderwort (*T. virginiana*), smooth spiderwort (*T. ohiensis*), and wide-leaf spiderwort (*T. subaspera*).

Spiderworts may appear to be among the most delicate and fleeting of our native wildflowers but they and their relatives have had a profound and lasting impact on the science of botany.

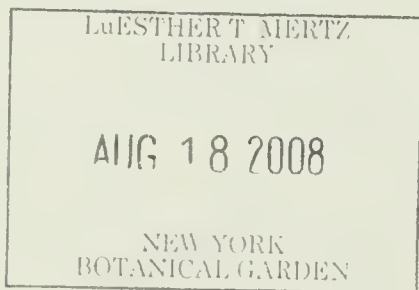
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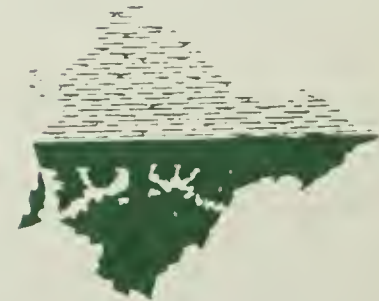
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Bulletin

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Conserving wild flowers and wild places

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Don't tidy up your winter landscape

As the growing season comes to an end, it's time for you to relax. Don't feel compelled to "tidy up" for the winter. All those standing stems and leaves and seedheads from the summer/fall flowering season provide habitat, food, shelter, and nesting materials for wildlife. "Cleaning" the flower beds removes important food and cover sources for migrating birds and over-wintering wildlife.

Herbaceous Plants. Stands of dead plant material retain moisture and stabilize ground temperature; the roots have aerated the soil and the stems, leaves and spent flower heads break the force of rain, and protect the ground surface from packing. Small birds can be seen scratching in the soft, open soil, feeding on worms, grubs, and insect egg cases.

Plantings of non-invasive ornamental grasses provide cover and seeds for a variety of wildlife species. Or, an unmowed area of lawn allows the meadow wildflowers and grasses to emerge, increasing the diversity of plants. Many of the plants we consider weeds produce flowers and seeds that are used by wildlife. Native wildflowers and grasses are particularly desirable
(See *Wildlife*, page 5)

Special Biological Areas need attention in new forest plan

All national forests must have a Land Management Plan, commonly called a Forest Plan. In the 1970s, Congress enacted laws that determine what goes into a Revised Forest Plan; clarifying regulations and policies were later issued by the Forest Service.

Work on the George Washington National Forest Revised Forest Plan is well underway and will provide the framework within which other project decisions can be made on a case-by-case and site-specific basis.

For areas of special habitat concern, please read these abridged comments made August 8 by the Southern Environmental Law Center to the Washington National Forest plan revision that included research from the Wilderness Society, the Southern Appalachian Forest Coalition, the Virginia Wilderness Committee and Wild Virginia.

Special Biological Areas

There is a need for change to designate as Special Biological Areas (SBAs) all areas recommended for such designation by the Virginia Department of Conservation and Recreation, Natural Heritage Program (NHP). It is not clear from the discussion in the draft Comprehensive Evaluation Report (CER)

whether the Forest Service adopted all the areas NHP recommended.

Even without this information, it is apparent that three areas, in addition to those proposed, should be designated as SBAs. The first concerns the several SBAs north of the Kelley Mountain Roadless Area. These SBAs protect the Shenandoah Valley sinkhole ponds. There is a need for change to expand the SBAs (or to designate a special area of some other kind) to protect the forest that surrounds and connects the ponds/SBAs. This would enable management of the entire area to be more consistent and comprehensive and would protect linkages between the ponds. This is the only opportunity on the National Forest to protect this type of habitat, and efforts to protect Valley sinkhole ponds on private land have been difficult, expensive, and at times impossible. There is precedent for this type of larger conservation area – the Shenandoah Crest SBA, which protects the Cow Knob Salamander and its habitat.

Second, an SBA is needed to protect wood turtles and their habitat in the Paddy Run/Cove Run area. Wood

(See *Forest plan*, page 4)

INSIDE: Return of the natives, pg. 3 Virginia Sneezeweed, pg. 7

From the president

VNPS supporters deserve a round of applause

At our annual meeting recently, we elected our new board members for the coming term. The board will no doubt take on a slightly different character, although there will still be many familiar faces. Some chapter presidents will change as well. I would like to extend my appreciation to those who are currently serving VNPS, both at the state and chapter level. The dedication of those who attend our meetings and make our society function cannot be overestimated. So, to all of you, my deepest thanks. I'm also looking forward to the new year and working with our new board members.

The Potowmack Chapter and their President Marianne Mooney did a fine job with the meeting. I would like to say thanks to all who made this event happen. Our banquet and speaker were fantastic, and the field trips focusing on

the interaction of local geology and flora were interesting. The heat was a little bit of a surprise to all of us. I hope to have a little more coverage in the next newsletter.

Charles Darwin, in his *Narrative of the Surveying Voyages of Adventure and Beagle*, wrote "...a traveller should be a botanist, for in all views plants form the chief embellishment." Today we often say that plants from a region give a person a sense of place. I feel I've had the opportunity to see quite a few different places this year, and recognizing the components of the green background adds an interesting layer to my travels. I hope it has added something to your journeys too, and that we will all keep learning about our native plants together.

Your President, Sally Anderson

VNPSers explore Kansas prairie ecosystems



The VNPS group explores the prairie at the Konza Research Station. On the right is guide Valerie Wright.
(Photo by Larry and Linda Wilcox)

The Virginia Native Plant Society-sponsored trip to the Kansas tallgrass prairie region was extremely interesting and satisfying. To begin with, it was completely different from all preconceptions that I had formed. I thought Kansas was flat—a tabletop; this region was rolling, grassy, rocky hills several hundred feet high, never very steep, but scenic in its vistas and panoramas. From the title of the trip, I really expected the grass to be tall. Actually, it was only about a foot to eighteen inches, having been burned a month earlier. This was fortunate because otherwise we would never have been able to find the numerous species

of herbaceous plants which grow in the grass. We would probably have lost a few of our group since they tended to dive right into the flora without regard to ticks and snakes. Thirdly, I was somewhat disappointed not to have seen a tornado (from about 20 miles away) as advertised on the evening news prior to our departure. The trip turned out to be much, much more than a botanical field trip. Set up and led by Larry and Linda Wilcox of Virginia Beach, it comprised a multi-faceted view of the entire area and ecosystem from several perspectives, each tied to the environment and the flora. Native prairie grasslands are the rarest and most threatened of all our ecosystems and are currently under intense scrutiny to determine how they work and how they can be restored and sustained. This area of Kansas, the Flint Hills, is unique in that it has very shallow rocky soil, underlaid with alternating layers of limestone and shale. It could not be farmed; breaking plows defeat crop farming

and breaking mowers deter haying; it could only be grazed. So most of the early settlers quickly moved further west. This fortunate situation is the reason that it exists today in a condition so near to its natural state—otherwise, the settlers would have transformed it beyond recognition.

Larry and Linda configured the trip to include six separate and distinctive venues, each presenting a different perspective on how the prairie ecosystem functions and why it is important to preserve it. The vegetation is dominated by four perennial, warm-season native grasses; big bluestem, little bluestem, Indiangrass, and switchgrass. The remainder is made up of hundreds of species of other grasses, composites, legumes, and forbs. Average annual precipitation is 33 inches with 75 percent falling during the growing season. The various groups did not always agree on the best mix of the various plants or how to achieve it. We were treated to each group's opinion and approach and it became apparent that no one currently knows the complete answer. This is an ongoing investigation with two main variables: burning and grazing. The issues are: how often to burn and how often and how heavily to graze. The objectives range from providing maximum plant diversity, represented as the key to

(See Kansas, page 8)

Gardening with natives is easier

A few years ago I stood next to a botanist from the Virginia Department of Conservation and Recreation. Together we visually surveyed a tract of land near the western slopes of the Blue Ridge. It was not your ideal garden spot: sandy, acidic soil, marshy in the spring, and bone dry by late summer. Yet the land was relatively lush, teeming with some of the rarest flora in Virginia such as the yellow Virginia sneezeweed that covered the ground as far as the eye could see.

Here in this inhospitable environment, I learned, was a snapshot of habitat as it existed before Europeans arrived in the New World bringing with them, by accident and on purpose, plant and animal immigrants that altered the landscape of Virginia. In many ways, those non-human immigrants, who arrived in Virginia starting in 1607, changed the commonwealth as much as the early settlers. Queen Anne's lace and chicory, for instance, are among those early hitchhikers as are later even less welcome invaders such as purple loosestrife, autumn olive, and tree of heaven. Those aliens, who arrived without their natural predators and thus with no checks and balances on their proliferation, often have free rein, squeezing out native plants and the animals that depend on them and drastically degrading the habitat around them.

Few if any invasives existed in the space where I stood with the botanist. The conditions were harsh enough and unique enough that immigrants, without an evolutionary strength borne over thousands of years, could not compete.

And that, then, is the beauty of Virginia's native plants. If you want a beautiful garden that is an ecologically sound wildlife habitat, comparatively low maintenance, and adaptable to unique or troublesome spots, then going native is a no-brainer.

Faye Lowry of the Upper James River Chapter could not agree more. A few years ago when she gave up her farmhouse for the convenience of downtown life in historic Lexington,

she knew that raking leaves and mowing a lawn, even a small one, would not be in the picture. So she opted for native – to date over 70 species thrive in her tiny town lot.

"Natives are easier and prettier. They are already acclimated to the area and are not as invasive," she explained. "I read an article about having a woodland garden in town and I decided to copy it."

Now tufts of spring ephemerals greet passersby along the front walk, while the oranges of native azaleas and the yellows of lady's slippers nod beside the walk to the back patio. Brilliant green arbor vitae form a living screen between her and a neighbor. A shady corner hosts ferns, and moss forms a carpet among mounds of green plants gathering energy for their summer bloom.

Her native experiment has even forged a friendship with the city public works department staff who supply her with as many leaves as she needs for mulching around her plants. Although she carefully planned her garden to be a mix of native perennials and shrubs, some members of her garden, such as the native mosses and ferns, simply knew an inviting place when they saw one and appeared when offered the right environment.



Faye Lowry stands next to a flame azalea in the side yard of her native garden located in the heart of a historic downtown district.



Katherine Smith shows off a cultivar of the native black locust, a Virginia native. (Photos by Nancy Sorrells)

Along the edges of the same town, a more suburban yard was the challenge faced by Peggy Dyson-Cobb who immediately began plotting the demise of her traditional lawn when she moved in a number of years ago. "The American style of watering and fertilizing so you can mow more just never really made sense to me," she explained. Now she has perennial sunflowers, black chokeberry, native petunias, blue eyed grass, cardinal flowers, and showy goldenrods. Instead of crown vetch or vinca as a ground cover, she encourages wild geraniums.

Dyson-Cobb, also in the Upper James Chapter, now celebrates the blooming of the native twinleaf and takes in the fragrance of the chokeberries that "smell just like honey" as well as the other aromas that "waft around me as I am weeding."

"Once I put them in," she says of the natives that she propagates by seed and cuttings, "I don't have to fool with them. They seem to deal really well with whatever the weather has to offer."

In fact, being able to work with Mother Nature, not battle her, is the real secret to gardening with natives. Take the fringe tree for instance. "The birds love the berries and I let the birds plant them for me!" she said.

Master Gardener and Upper James President Katherine Smith sees native plants as the answer to the endless variety of gardening situations that people encounter. On her own Rockbridge County farm, she encourages certain plants such as viburnum around the house, others such as hazelnuts and shrubby forms of dogwood

(See Return of the natives, page 6)

•Forest plan

(Continued from page 1)

turtles are a Virginia-listed Threatened species and are ranked by Nature Serve as S2 – Imperiled in the state. The Paddy Run/Cove Run area, where the wood turtle population is centered on two small watersheds composed almost entirely of National Forest land, represents the best opportunity for a viable population of wood turtles over the long term. The turtles' habitat on private land in Northern Virginia is under extreme pressure from development and their protection on private land cannot be ensured. The Paddy Run/Cove Run area represents the best opportunity to secure (or at least promote) the continued existence and sustainability of wood turtles through the protection of the turtles and their habitat.

The Draft CER states that a habitat management strategy is being developed by the Forest Service and the Virginia and West Virginia wildlife agencies and claims that "[t]he strategy will be used to provide information for the planning process." The CER and the plan, however, do not reflect any information about wood turtles or any habitat management strategy and, in fact, provide no evidence of the required planning to ensure the sustainability of the wood turtle, a vital element of the GW's native diversity. (See NFMA, 16 U.S.C. § 1604(g)(3)(B) (provide for diversity of animal communities); 2008 NFMA Regulations, 36 C.F.R. § 219.10(b) (sustain ecological systems and support diversity of native animal species).)

Protection of wood turtles in a Paddy Run/Cove Run SBA is essential to provide for the continued existence of this species in the state of Virginia and the USFS Southern Region. In addition, the wood turtle should be a species of concern in the revised plan, since additional provisions beyond the general plan components are needed to provide appropriate ecological conditions for this species. (See 36 C.F.R. § 219.10(b)(2).)

Steven Krichbaum developed and proposed an SBA in the Paddy Run area for the wood turtles. That proposal was endorsed by the NHP. There is a further need to extend the SBA beyond Paddy Run to Cove Run, which also supports wood turtles. A small finger ridge

at the VA/WV state line separates the two streams, with Paddy Run flowing into Cedar Creek and Cove Run flowing into West Virginia and Waites Run. The Forest Supervisor's response to Wild Virginia's October 2006 letter stated that the GW would consider the information in the plan revision. The draft CER and plan, however, reflect no such consideration.

We understand that wood turtles also have been found in other areas of the GW. These areas also should be considered for designation as SBAs. Further, the occurrence of wood turtles in these areas demonstrates the need to designate the turtle as a "species of concern" and to adopt specific additional provisions in the revised plan (i.e. standards) to protect them in areas of the GW that may not be designated SBAs.

Third, NHP recommended the Forest Service designate a Peters Mountain North SBA. This recommended SBA is described in the NHP report cited in the draft CER and linked to from that document. (See I.T. Wilson, VA DCR, NHP, *Biological Diversity Protection on the GWNF, First Supplement*, Natural Heritage Technical Report 00-10, Unpublished report submitted to the USDA Forest Service, at 74-75 (2000).)

This report explained that Peters Mountain North "encompasses an unusually large contiguous stand of old-growth oak-dominated forest. The old growth occurrence occupies approximately 3,600 acres on the crests and middle to upper side slopes of the northernmost ridge of Peters Mountain." On April 2, 1996, Natural Heritage wrote to Ranger Snow describing the 3,600-acre area as "one of the largest known contiguous occurrences of Appalachian oak forest in old growth condition in Virginia and perhaps in all of the central Appalachians."

NHP proposed a 4,051-acre SBA to include a buffer around the old growth and a rare mountain pond community which supports a large population of the federally endangered northeastern bulrush (*Scirpus ancistrochaetus*). "Logging or road construction would destroy the integrity of this unusually large stand of old-growth forest." Yet the draft plan proposes to allocate the entire NHP-recommended

SBA to "general forest" suitable for timber production and harvest, road construction, wind energy development, and available for oil and gas leasing without surface protection. The area should be designated an SBA. The Snake Run Ridge area encompasses this SBA, another reason to protect the entirety of Snake Run Ridge as a special area.

Regarding the management of SBAs, SBAs are identified as unsuitable for timber production, timber harvesting and road construction. They should continue to be so identified. They also should be unsuitable for salvage harvesting, temporary road construction, and construction of wind generation sites. Any oil and gas leasing should be with "no surface occupancy."

Compiled by Sarah Francisco of the Southern Environmental Law Center (www.southernenvironment.org)

What the plan is, and isn't

Just as important as what this Revised Forest Plan (FP) does are those things it does not do. Here are some differences. For complete information about the GW plan, including documentation, meeting schedules, and access to a comment area go to: (<http://www.fs.fed.us/r8/gwj/forestplan>).

Federally-listed Threatened and Endangered Species: The FP DOES provide desired conditions, objectives and guidelines to guide on-the-ground management of projects and activities. All of this is focused on allowing the forest to contribute to sustaining or providing habitat conditions for species listed for protection under the Endangered Species Act. The FP DOES NOT decide which species will be protected under the Endangered Species Act.

Timber Harvests: The FP DOES identify long-term sustained yield and DOES identify which lands are suitable for timber harvesting but DOES NOT identify individual areas that will be offered for sale. It DOES provide guidelines to determine where and how sales can occur but DOES NOT approve site-specific timber sales.

•Wildlife

(Continued from page 1)

for native birds and small mammals, as well as winter cover crops of clover, rye or timothy.

Frost and snow on standing plants is beautiful – one of the most important things to cultivate in your garden is your eye. Hydrangea and sedum remain upright over the winter and offer visual dimension to the garden landscape.

Nature has no off-season! Early blooming witch hazel and highbush blueberry will raise dull winter spirits.

Woody Plants. Fruit and nut-bearing trees like oaks, walnuts, sourwood and beech provide important winter food for resident birds. Their natural cavities are used for nesting and shelter by many wildlife species. Fruits that persist on the tree over the winter such as winterberry, hollies, and cedar are especially desirable. Shrubs like beauty berry, bayberry, and hearts-a-bustin' remain attractive to winter-

ing wildlife all season. It's important to place the food close to the cover to minimize the exposure of feeding wildlife to weather conditions and predation; these two factors account for more than 90 percent of winter mortality.

Tree fruit becomes sweeter during freeze and thaw. The fruit is available to provide resident wildlife species food in lean times during the winter and into early spring, and for returning migratory birds. If space is a limitation in your yard, consider winter food plants first. They are the most important because natural foods are scarce during this season.

Evergreens should occupy a significant portion of a wildlife habitat garden; dense shrub and evergreen (native red cedar) plantings provide valuable escape and roosting areas and shelter in rain, heat and harsh winter weather. In addition to providing critically needed winter cover, these woody areas provide important nesting and feeding areas for a wide variety of woodland songbirds. During all seasons, they are cover for escaping predators. They block wind for feeding areas and in summer, they are used as nesting sites. The sap, needles, twigs, buds and seeds, and insects that make their homes in evergreens, are food for wildlife. Cavities in the trees are often used for nesting, roosting and shelter.

Vines like poison ivy and greenbrier may be unfriendly to humans, but birds and small mammals love the berries – they are not allergic to the oils or bothered by the thorns! Virginia creeper is a native fruit bearing vine often naturalized by wild birds. It is an important food source to over 35 species of birds. Unfortunately it is a poison ivy look-a-like and is often destroyed for that reason.

Birds play an important part in planting a natural habitat. Natural scarification of seeds the birds have eaten occurs during digestion. The seeds are passed in excrement, landing where they will grow to produce fruit and nectar for the next generation. It is your choice to keep the new plants or treat them as weeds. You may transplant them once they have started growing if you don't like where the birds planted



Twinleaf seed pods
Illustration by
Nicky Staunton

them. American holly trees with evergreen leaves are particularly attractive to winter birds who will plant a varied garden beneath its branches.

Dead trees, brush piles. A "snag" is a dead or dying tree. Snags are like gold in the wildlife world, used as nesting sites, perching sites, as food sources and to establish territory. Brush piles provide nesting and den sites, and escape cover for many species of wildlife, including small mammals, birds, amphibians and reptiles. Piling the prunings from your yard in a secluded corner will create a brush pile that grows over the years.

And where are the butterflies and moths during the winter? Most have formed their cocoons high in native trees – the oaks, willows, hackberry, and maples. When pruning these woody species in February, the branches should go in a brush pile to permit development of the adult forms; burning or hauling dead woody plant material is a loss to native wildlife. Pollinators are weathering over in brush piles — don't burn! It's likely that praying mantis egg cases are overwintering there.

Diversity. A garden landscape with a wide variety of plant species, at varying heights, will meet the needs of wildlife that feed, nest or find shelter at different levels. And a mix of trees, shrubs, herbaceous plants and standing ground cover will reduce severe insect or disease problems.

Landscaping for wildlife is gardening at its very best!



Milkweed
seed pods

Illustration
by
Barbara
Stewart

Book on plants of early America is a work of art

Just because something is beautiful doesn't mean it can't possess valuable scientific information as well. Such is the case with *Flowers and Herbs of Early America*, researched and written by Lawrence D. Griffith, and lavishly illustrated with Barbara Temple Lombardi's amazing color photographs. The oversize, full-color coffee table book is produced by the Colonial Williamsburg Foundation in association with Yale University Press. (300 pp., hardcover with dustjacket, ISBN 978-0-87935-238-7)

Griffith, the curator of plants for Colonial Williamsburg, incorporates his years of experience into the 56

plant essays that detail how these plants were cultivated and used in the gardens and homes of early colonists. More than 30 of the plant essays feature Old World introductions, many of which are now naturalized in Virginia. The rest of the plants are new world varieties and half of those, such as the sunflower, were in Virginia in 1607.

Each plant essay includes a period woodcut, a botanical information box, an essay meticulously documenting the research trail followed by Griffith, and of course, Lombardi's dazzling photographs. There could hardly be anyone not drawn to this

book—from historians and botanists seeking more information about Virginia's botanical heritage, to gardeners wishing to choose appropriate species for period gardens, to those who want to escape the stresses of the world by turning the pages of this beautiful book and soaking in the natural beauty presented inside.

The author is available for speaking engagements and book signings. If anyone knows of native plant society chapters, gardening clubs or historical societies that might be interested, contact Penna Rogers (public affairs, Colonial Williamsburg, 757-220-7702; PRogers@CWF.org).

•Return of the natives

(Continued from page 3)

around water courses for the wildlife, and then native grasses like switchgrass in the pastures. Shade or sun, shale or clay, rich or poor soil, wet or dry, there is a native plant that has, over millennia, learned to adapt and thrive.

"I do an awful lot of my gardening by subtraction," she said with a laugh. After removing what shouldn't be there, such as multiflora rose, she often waits for the appropriate plants to reappear. If they don't then she brings in what should be there based on the unique conditions of that spot.

Finding the right species or cultivar is an "intellectual chase" she noted. Many of her plants have to be started by seed or cuttings because the commercial growers and nurseries have been slow to catch on to the commonsense of going native. These days, however, there are a growing number of nurseries that specialize in natives.

Natives can also be the answer in new housing situations that often create exposed banks that erode badly until groundcover is established. Landscapers of the past resorted to invasive groundcovers such as crown vetch or vinca to hold the soil in place but those plants created unbalanced habitats giving foothold to plants that quickly spread into and ruined other garden

spots. An alternative was to plant day lilies, also an immigrant species but one that offered nice bloom without the harmful invasive qualities. Unfortunately, in areas where deer are a problem, day lilies are tantamount to opening a deer salad bar.

Smith has a better way of dealing with those clay banks that frustrate gardeners in new housing developments. She recommends a variety of native mints (*pycnanthemum*), goldenrods, tall black-eyed Susans, deer grass, and Gro-Lo sumac, which is a cultivar of fragrant sumac that deer find distasteful. "You want something that perennializes and takes over and all of these plants do that. The goldenrods and mints will attract the beneficial insects such as butterflies and the scavenger wasps."

Because native gardens require little if any pesticides, the enhanced wildlife habitat is a further bonus. Especially the "beneficial insects" noted Smith. "If you are going more natural by never using Seven or Malathion again, then you are going to have to get help from Mother Nature. The small parasitic wasps, for instance, are good. One type goes against Mexican bean beetles. And so many of the adult forms of beneficial insects are nectar or pollen eaters that you have to keep flowers going during the time they are eating."

When the first settlers arrived in Jamestown in 1607 they found a lush and complex world of flora and fauna that had evolved over the eons before Old World met New. Those first explorers and colonists wrote enthusiastically about Virginia's almost endless variety.

Today's gardener can find much to like about going back to what plants had already learned to thrive in the natural world long before 1607. None of the three native plant gardeners in this story can think of a single reason not to strive for the natural compatibility of Virginia's first plants. "I saw how well they did and how easy they are to manage in a landscape. Very few have insect or disease problems and the wildlife seems to really appreciate them," Smith says of the return of the natives.

Nancy Sorrells, VNPS Bulletin Editor

Giving credit

The last Bulletin contained an article about the unique ecology of the Potomac Gorge—the site of the recent VNPS Annual Meeting. Mary Ann Lawler should have been credited for the fine article that she put together. Thanks Mary Ann for your hard work on the article and on the meeting.

Virginia sneezeweed

One of the state's rarest plants

Ah-choo! An allergic reaction to *Helenium*? No! The sneezeweed got its name from early settlers who would dry the yellow flower heads and grind them into a snuff. People sniffed the snuff to make them sneeze and open stuffy noses. At the time that Virginia sneezeweed (*Helenium virginicum*) was listed as federally threatened, the plant was thought to be restricted to about 25 seasonally inundated sinkhole ponds and meadows in Augusta and Rockingham Counties, Virginia. Since then, however, more than 25 populations of the sneezeweed have been identified in three counties in southern Missouri. What led to this disjunctive distribution is unknown. The number of individual plants at each site varies from year to year, from a few plants to hundreds of thousands.

H. virginicum is well adapted to the fluctuating water levels of their native habitat and rosettes can sometimes be observed completely submerged. The ability to survive periodic inundation may give the sneezeweed a competitive advantage over



Virginia sneezeweed in one of its favorite habitats: a sinkhole pond in southern Augusta County. Close-ups at left and a full frame of the knee-high plants above in August as they dominate the dried bed of the pond. (Photos by Nancy Sorrells)

other plants in the same habitat. In Virginia, the ponds supporting the sneezeweed have poorly drained, acidic, silty loam soils, and are generally flooded from January to July (USFWS 1998). Associated species include, black-fruited spikerush, warty

panic grass, and northern St. John's wort (VA NHP website).

In Missouri, *H. virginicum* occurs at the margins of sinkhole ponds and in wet meadows (Rimer and Summers, in review). The wetlands inhabited by *H.*

(See *Sneezeweed*, page 8)

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The deadline for the next issue is **October 30**

• Kansas

(Continued from page 2)

prairie ecosystem sustainability, to producing the best beef at the cheapest price.

The group visited six prairie venues: **Overland Park Arboretum and Botanical Garden** where they are beginning to restore the grasslands which have grown up in scrubby trees such as eastern red cedar and osage orange; **Coblentz Prairie** that is being restored to a natural state from a grazing application and contained an extremely diverse inventory of plants; **National Tallgrass Prairie Preserve** an 11,000-acre preserve that exists because of a cooperative effort between the Nature Conservancy and the National Park Service and includes almost 400 species of plants, 150 species of birds, 31 species of mammals, and 39 types of reptiles and amphibians; **Mushrush Registered Red Angus Ranch** where we heard a discussion with the local extension agent and a rancher involved in Angus breeding and beef cattle grazing operations; **Grandview Ranch** that promotes a public understanding of the need to burn the native grasses and the **Konza Prairie Biological Station**, an 8,600 acre native tallgrass prairie field research facility operated by Kansas State University and the Nature Conservancy.

Ralph Will, John Clayton Chapter



The federally listed Mead's milkweed (*Asclepias meadii*) was the rarest plant seen by the VNPS group in Kansas. This plant was named for its discoverer, Daniel Barnham Mead. (Photo by Larry and Linda Wilcox)

• Sneezeweed

(Continued from page 7)

virginicum are associated with dolomite and limestone geologies that are subject to fluctuating water levels that vary from year to year (Van Alstine, 2000).

Helenium virginicum flowers from early July to October, with peak flowering occurring in late July to early August at most sites. The pollination biology of *H. virginicum* has not been studied in detail; however, the primary insect pollinators appear to be bees, wasps (Hymenoptera: Apidae, Halictidae, Sphecidae), butterflies (Lepidoptera: Hesperidae and Lycaenidae, among others), and hoverflies (Diptera: Syrphidae). Seasonal water fluctuation, particularly inundation, is probably a key factor affecting recruitment and maintenance of *H. virginicum* populations.

Habitat modification is the primary threat to *H. virginicum*. Some of these modifications include residential development, filling of wetland habitats, and other disruptions of hydrology. Cattle grazing and mowing at moderate levels can be beneficial, however, overgrazing or poorly timed mowing could have long-term adverse effects.

The future needs for Virginia sneezeweed populations include surveys for new sites and monitoring of known sites. Collection and storage of seed from populations is needed in both Virginia and Missouri.

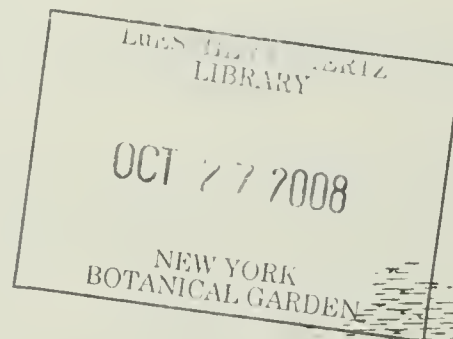
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Bulletin

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Conserving wild flowers and wild places



Climate change & Virginia's wildlife

The Virginia Native Plant Society was invited to attend a workshop sponsored by the Virginia Department of Game and Inland Fisheries (DGIF), the National Wildlife Federation (NWF), and the Virginia Conservation Network (VCN) entitled *Conserving Virginia's Fish and Wildlife for the Future: Preparing for a Changing Climate*. The workshop was held in Wakefield, Virginia, on October 30. Its purpose was to bring stakeholders together from throughout the commonwealth to consider the likely impacts of climate change on Virginia's fish and wildlife and to develop strategies to determine how to adapt their conservation efforts.

Numerous organizations partici-

pated in the workshop including DGIF, NWF, the Department of Conservation and Recreation's Natural Heritage Program, the Virginia Department of Forestry, U.S. Forest Service, U.S. Fish and Wildlife Service, the Nature Conservancy, National Audubon Society, Piedmont Environmental Council, Chesapeake Bay Foundation, local government planning entities, and several non-profit organizations with concerns about fisheries, wildlife, and habitat.

Dr. Douglas Inkley of NWF provided an overview of the potential impact of climate change by the end of the century. His projections were grim. With rising temperatures, 78 percent of the biome of federal wildlife refuges in the southeast would be harmed. The Chesapeake Bay could rise by 27 inches, and half of bay habitat would disappear. Dry land would become swamp

and marshland. Dead zones and invasive species would increase with huge changes in species composition and ecosystems. In the Appalachians the spruce and fir forests in which numerous songbirds breed would disappear. Water temperatures in streams would be too hot for trout to survive—they could all disappear.

David Whitehurst of DGIF stated that the recently completed State Wildlife Action Plan will need to be "retrofitted" to take climate change into account. With the help of the Natural Heritage Program, they are identifying the species of greatest conservation concern by taxonomic group. It is clear that the most imperiled habitats are in southwestern Virginia and on the

(See *Climate change*, page 8)



Monarch migration studied by VNPSers

A September day turned summer for the field trip – temperatures in the upper 80s. Following a walk in the center of the Occoquan Bay National Wildlife Refuge (OBNWR), our VNPS Annual Meeting group reached water's edge at the junction of the Occoquan River, Belmont Bay, and the Potomac River. Hoping for a breeze, none was found. An accelerated walk was in order to the site for Larry Brindza's noon post-lunch presentation about monarch butterfly tagging.

Larry, on behalf of the CVWO (Coastal Virginia Wildlife Observatory)

(See *Monitoring the monarch*, page 3)



Releasing the Monarch

INSIDE: VNPS gifts pg. 5 Annual Meeting photo essay, pg. 5

From the president

VNPS Chapters 'walk the walk' and 'talk the talk'

I'm always interested in reading the newsletters from our 13 chapters and hearing reports from the presidents or chapter representatives at our board meetings about what they are doing for native plants. The chapters are where most of our VNPS activities occur and it is the way we get our message out. I'd like to review our mission and give some examples of the neat things chapters are doing to make that happen.

The key words are "share" and "emphasize," and the best way we do that is through walks and talks (programs). Our walks are famous for being slow, slow, slow. I can

(have to) hike fast with my spouse, but VNPS walks are opportunities to observe plants, see where they grow, discover what is special about that place, and learn from others on the walk. Another way to share the walks and plants we see is to pull together lists of places to visit and plant lists from our field trips for those who can't make a particular hike, and to treat others to slide shows or articles about the plants, their habitats, challenges to their survival and other news. These are regular features of chapter programs and newsletters.

One area where we may fall short is sharing these experiences with children. However, some outreach from chapters to young people has begun, offering opportunities to share the plants and their stories. If there are any interested teachers out there, I hope I'll hear ideas from you. Having recently led a "Berries and Nuts" walk where there were both children and adults, I found it refreshing to hear the questions children asked and to learn their level of environmental knowledge.

My own Piedmont Chapter has done a skit for two years for fourth graders that pits invasive *Ailanthus* trees against a white oak in a struggle for light and nutrients.

Pocahontas Chapter has taught children about plants that were being used here when European settlers arrived. Having kids on a hike can be difficult unless the hike is billed as a family event, but there is a lot to

teach and it's fun because it is a time of discovery for children. Being closer to the plants often gives them a perspective we cannot share except through their questions and observations.

Some of our chapters give scholarships; some donate to the Flora of Virginia Project; some have gar-

dens that display examples of native plants at state parks or schools, and members provide staff for booths and give talks to garden clubs, Master Naturalists and Master Gardeners.

We have a

state program about invasive alien plants, and many chapters have taken this topic into their local communities, which, in my estimation, has made a huge difference in awareness of the subject.

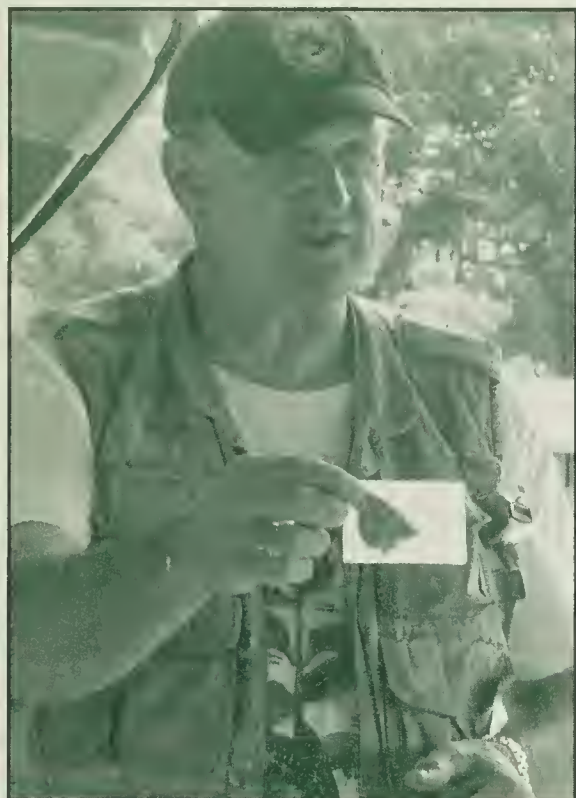
The Upper James River Chapter has a series of brochures on invasives. The Potomack Chapter has a listserv that offers opportunities weekly for invasive removal projects, and many other chapters care for a piece of land that is burdened in this way. Another idea that has come up recently involves showing environmental films, both to children and adults, especially in weather when outdoor walks might not be appealing.

I was inspired to write this because of reading a recent John Clayton Chapter newsletter that told of the scholarships given, programs presented, walks taken. But this newsletter typifies what I see from one chapter after another. Whatever your chapter chooses to do to further the mission of VNPS, those of us in the state organization who are trying to put the VNPS cause into action appreciate your efforts. I hope you will share new ideas among yourselves, with other chapters and with the state board. This includes our members at-large who are also invited to share suggestions and ideas that will help VNPS fulfill its mission. Thank you all!

Your President, Sally Anderson

The VNPS mission

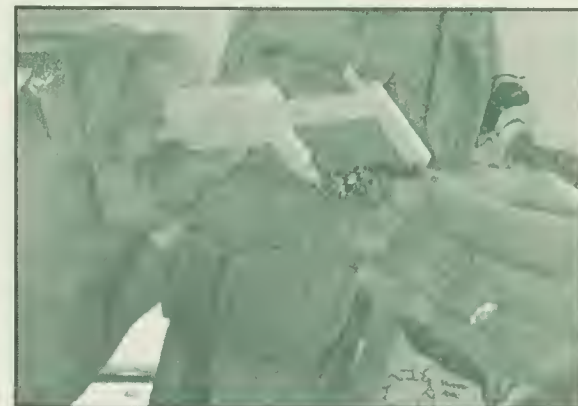
- VNPS is a non-profit organization of individuals who share an interest in Virginia's native plants and habitats. The Society and its chapters seek to further the appreciation and conservation of this priceless heritage.
- The Society's programs emphasize public education, protection of endangered species, habitat preservation, and encouragement of appropriate landscape use of native plants.



Monitoring the monarch



Larry Brindza with captured female monarch, left, and then measuring the monarch with calipers. (Photos by Nicky Staunton)



(Continued from page 1)

shared his experience with tagging and releasing monarch butterflies on their migration to Mexico. He began as a counter of migrating raptors. While waiting for them, he noticed the monarch butterfly migration which captured his attention so much that he began volunteering with tagging efforts.

Monarchs have been scarce this year and it took several hours for him to net one at OBNWR, a female (no black spots on the hind wing upper side). The process was then to carefully place the butterfly in a glassine envelope and, using a micro-weight scale, weigh the insect within the envelope. Then, removing the butterfly from the glassine envelope, he measured the length of the front of the forewing with a caliper. The weight and length of the forewing indicates the butterfly's ability to complete the migration.

The next step was to place a tiny adhesive 9mm Polypropylene tag with a number on it on the distal surface of the wing. (<http://www.monarchwatch.org/tagmig/tag.htm>). Then the butterfly is released for migration. When a deceased monarch is spotted, it is collected and searched for a tag. The finder receives a five dollar bounty per tag that is returned to the data base at the University of Kansas.

As a follow-up on current monarch migration, Dr. Lincoln Brower of Sweet Briar College was co-sponsored for a lecture by Shenandoah University and the Foundation of the State Arboretum. Some VNPS members attended and learned that, while the migration of monarch butterflies might cease along the east coast route, they would not become extinct as they will continue stronger migration along the middle US and western routes to Mexico. Decline is attributed to habitat destruction both in Mexico wintering locations due to illegal timbering and in the United States, to removal of natural habitats for development (erasing the vegetation and terrains) and to the effect of herbicides used for agricultural efficiency. Insects cannot anticipate the toxicity of the nectar that contains herbicides. Dr. Brower is preparing a report to be published about the status of monarch butterfly migration that is expected to be published soon.

Visit Monarchwatch.org or <http://www.cvwo.org> to learn more.

Nicky Staunton, VNPS 1st Vice-president

Flora Project update

Writing, editing, comparing of descriptions to the commonwealth's herbarium specimens, illustrating and the production of the *Flora of Virginia* is well under way. Some levels of preparation have been completed. We are this far along because of your enthusiastic and loyal financial support since 2000, when the project began. Upon publication, Virginians will finally have a book in hand that contains the name, range and botanical information for every plant identified as living in the natural landscapes of Virginia!

The entire board of the Flora of Virginia Project thanks you, as do the authors, Chris Ludwig, Alan Weakley and Johnny Townsend, along with Lara Gastinger, principal Flora illustrator. They all continue their sure, steady pace toward the 2012 publication goal.

One can get extremely excited thinking of Virginians finally having their first manual on Virginia's plants since 1762! Yes, 1762! Virginia, at 3,500 plant taxa, stands out as having close to the highest diversity of plant life relative to land area in America. We have been leaning on our neighboring states' floras including West Virginia, the Carolinas, and Maryland, the most recent of which is 25 years old. Our work on the *Flora of Virginia* will place us in the lead with the newest, most accurate and most complete state flora. We can anticipate finally being able to share our *Flora* with neighboring botanists, students, natural resource managers and interested wildflower enthusiasts.

How about a GIFT IDEA for the holidays or any time during the year? You might consider making a memorable gift of \$1,000 or more to the Flora

(See *Flora Project*, page 7)



Two of Virginia's "remarkable trees" found in the Shenandoah Valley: at the far left is Bridgewater's white oak (*Quercus alba*) that has been around since about 1700. The tree is 70 feet tall and has a diameter of 5.5 feet. The other tree, also a white oak, is the Prayer Oak in Augusta County. Confederate General Thomas Jonathan "Stonewall" Jackson reportedly worshipped under its branches during the 1862 Valley Campaign. (Photos by Nancy Sorrells)

New book highlights Virginia's remarkable trees

For many years I heard people talk about champion trees in Virginia. At the State Arboretum near Boyce, where I often volunteer, was a hackberry (since fallen) that was stated to be the second largest in the state. But where was the largest, and who was recording them? I had seen a few lists, not necessarily up to date. When I discovered the Remarkable Trees website I was happy to see not just a list, but all that the internet can provide. There are photographs, it is easily updated, the user has the ability to nominate trees and search the list, and there are educational activities for schoolchildren. The downside though is more time in front of a computer screen.

Now we have a complementary volume to that website, *Remarkable Trees of Virginia*, and it is a beautiful printed book you can sit with under a tree or in any other favorite place. Lists are elsewhere, and statistics are gracefully incorporated into the descriptive text. This is beauty and inspiration you can hold. No power cord needed. Authors Nancy Ross Hugo and Jeffrey Kirwan and photographer Robert Llewelyn, have collaborated on this lovely volume from the University of Virginia Press and Albemarle Books.

While the state champions have a chapter of their own, the authors have acknowledged that measurements do not necessarily take form or beauty into account, and that trees have meaning outside of size and age. Hence there are chap-

ters on historic trees, community trees, unique trees, and species that are of special beauty or interest. Oaks are so much beloved that they get a chapter to themselves. Each topic is introduced and the reader is given some idea of the reason for the choices. On every page, accompanying a stunning photograph, are text and informative captions that describe the specimen and tell stories about it.

The use of documents and historic photographs to document age, the way habit or form is influenced by the surroundings, the habitat preference and natural range of many trees can be found in the clear, informative prose. Tidbits of natural history and wildlife associations are a part of the story of these trees, from the acorns of overcup oak that disperse by floating (a sign of weevils in other acorns) to sweetgum as a host for the luna moth. Human use of trees, such as red spruce in pianos and white oaks in ship building provides another interesting angle.

Both within and outside of the chapter on historic trees are stories of the past. Some of these are personal, such as the story of Sallie's crying tree. Some are cultural, such as two brothers, shade-tree mechanics and NASCAR racers, working under a huge beech tree. Some stories are of broader historic interest like the freeing of 600 slaves of Robert Carter III 72 years before the Emancipation Proclamation, under the

tulip poplars at Nomini Hall, Westmorland County.

Our connections to trees receive great emphasis in this book. Many photos include homes, swings, and children, pets and adults standing on and around the central character. Tree climbing is not forbidden, but encouraged as a way children forge a connection to the outdoors. Many of our greatest trees are found in human environments.

Public forest lands of our state were largely stripped of trees by 1920 according to the text. Noted in the chapter on places to see trees is the fact that many of those on public forest land are of smaller stature than the behemoths in our small town and farm settings. The authors point out that it is up to us to seek to protect these lands, which fortunately have largely been reforested. One might see the old growth trees of Europe as having been replaced by the columns of antiquity or cathedrals to provide places where human spiritual life can be lived. Let us hope that our living columns will be preserved rather than replaced, and extend our care to future trees of age, size, ecological interest and historical importance. This is a book with the ability to bring trees to life for people of many levels of interest and knowledge, and should help foster that protection.

Sally Anderson, VNPS President

Remembering good times at the VNPS Annual Meeting...



Spotted turtle crossing Easy Street



Trip leader Mark Strong at Suitland Bog



Charter members Reginald and Liz Smith and Ted Pockman (PT)

Suitland Bog and Turkeycock photos by Sally Anderson. All others by Nicky Staunton.



Cooling those tired toes!



Trip leaders Rod Simmons and Tony Fleming preparing a group for a trip to Turkeycock.

Holiday gift ideas for VNPS friends and family

FINDING WILDFLOWERS IN THE WASHINGTON BALTIMORE AREA by Cris Fleming, Marion Lobstein & Barbara Tufty, Johns Hopkins, \$25 Amazon.com

Text by Cris Fleming, USDA Graduate School educator and field trip leader for Audubon Naturalist Society, Marion Lobstein, Associate Professor of biology, Northern Virginia Community College in Manassas and field trip leader for the Smithsonian Associates, and Barbara Tufty, a natural science writer and conservation editor for the Audubon Naturalist Society until her death in 2008. Maps by Jo Moore; line drawings by Nicky Staunton. Foreword by Stanwyn Shetler, Curator of Botany Emeritus, Smithsonian.

THE VIRGINIAN NATURALIST by John Trott, \$24 (\$20 + \$4 shipping/handling)

VNPS Office, vnpsoc@shentel.net, 400 Blandy Farm Lane, #2, Boyce VA 22620 or 540-837-1600.

Essay collection by John Trott (1927-2000), originally published weekly in the *Fauquier Times Democrat*. Collected and published by Piedmont Chapter of VNPS with the Middleburg Garden Club. Line drawings by Nicky Staunton. 2nd Printing. (Ideal for young naturalists.)

THRILLING TRILLIES AND CAPTIVATING CATTAILS: Ethnobotanical Essays of Mid-Appalachia by Elwood Fisher, extensive line drawings by Anita Cooper, introductory essay by Nancy Sorrells, contact Chris Bowlen \$15 (\$10 + shipping/handling).

A collection of essays written by retired James Madison University professor Dr. Elwood Fisher. Most originally published in the *Harrisonburg Daily*

News Record. Dr. Fisher, who grew up in West Virginia, draws upon both his graduate work in botany and the folkways training he had with his grandmother, the community expert on the uses of plants. Introductory essay by Sorrells is an oral history of Fisher.

VIRGINIA NATIVE PLANTS: A Short Course on Plant Taxonomy to Describe the Dominant Flowering Plants in the Fredericksburg Area, by Hal Wiggins, full color, paperback, Amazon.com or <http://stores.lulu.com/halwiggins> \$24.57.

Hal Wiggins, Environmental Scientist with the Regulatory Program, U.S. Army Corps of Engineers.

A FIELD GUIDE TO CROWS NEST by Hal Wiggins, <http://stores.lulu.com/halwiggins>, \$33 full color paperback, \$10 black and white paperback.

(See Gifts, page 8)

Industrial wind

Turbines poor fit for Appalachian forests

In a 21st century version of traditional Appalachian exploitation, industrial wind developers have arrived in the mountains where I live. Developers themselves called it "a gold rush" at a recent wind industry conference, referring to the nearly 50 percent nationwide increase in wind electricity installations over the past year.

At the same conference, I saw a state wind resources map. Thin red currents of air along the highest ridges west of Virginia's Shenandoah Valley were ranked as possibly strong enough to power turbines. Similar currents are stirring on maps all along the Appalachian Mountains.

Some of those ridges happen to be national forest, where native plants should take precedence over industrial plants.

The million acres of the George Washington National Forest, like millions more acres of national forest to the south, were left burning and eroding by private timber companies during the "cut out and get out" logging in the early 1900s. Authorized by the Weeks Act of 1911, the U.S. Forest Service bought the land for the public and stopped erosion and arson, planted millions of trees, and built outdoor facilities enjoyed by millions of people annually. Millions more depend on the clean water and air that come out of the national forests, and local timber industries benefit from regulated harvests. The steep slopes and slender ridgelines are healing from old abuse and have become a refuge for people and wildlife, as landscapes develop all around.

In the roughest, least accessible places left unlogged for a century, oaks have time to mature into heavy acorn producers. Black bears that eat the acorns prefer to den about a mile from any road, 50 feet up in the cavities of big old trees. That

real estate is difficult to find except in national forests, and industrial wind development will destroy it there.

Every turbine – hundreds are proposed, each over 400 feet tall – will require clear-cutting as many as five acres of forest. Many miles of new, extra wide roads (to accommodate turbines around curves) and transmission lines will slash open the forest interior to poachers and pests like Japanese stilt grass, a highly invasive nonnative. The bald eagles that began nesting and overwintering here in 1981 and that rise on warming updrafts could get smacked at ridge-crest, like more than a thousand eagles, hawks, and owls killed every year at California's notorious Altamont Pass. Migrating songbirds get hit, too.

Caves in these ancient mountains host bats of many species, including two endangered species. Bats are attracted to clearings around turbines to eat huge quantities of flying insects, including disease-carrying mosquitoes. Bats may also be lured by night lights required by the Federal Aviation Administration. Some four thousand bats were killed in one year – the most ever documented worldwide – at Florida Power and Light's installation in Mountaineer, W.Va. Maybe the strobe effect of the blades, called shadow flicker, simply drove them batty.

Low frequency sounds from turbines can keep humans within a mile or two from sleeping and cause other symptoms, according to medical literature. A doctor in New York State named it "Wind Turbine Syndrome."

Death, destruction and insomnia are marketed as "renewable electricity" to urban consumers. The federal production tax credit drives it all, with additional subsidies on national forest, where no property taxes are levied. In the

three years that the tax credit wasn't reauthorized since first enacted in 1992, the skyrocketing industry plateaued like a mountaintop-removal coalmine.

Coal is our major electricity-generating fuel, and using it is massively destructive to forests. But destroying more forests in order to stop destroying forests is, well, batty.

Because wind is capricious, turbines produce 30 percent or less of their maximum capacity and must be permanently backed-up by coal or other fuel. We'd have to replace nearly every tree with a turbine to offset even a small amount of coal's impact, devastating the forest in the process. Without a national policy on energy conservation and efficiency, we're whistling in the wind anyway.

Industrial-scale turbines may work well in vast midwestern croplands, where they require no logging, mining, drilling, or water for processing, and emit no pollutants. Offshore may also be appropriate. There winds are strong and promising, although little research has been done on wildlife impacts.

In richly forested Appalachia, a community-scale approach using solar panels and small turbines, with few environmental impacts, better suits the landscape. And in national forests, which are dedicated by law to "outdoor recreation, range, timber, watershed, and wildlife and fish purposes," the green forest is itself the gold.

*Chris Bolgiano is the author or editor of five books, including *Living in the Appalachian Forest: True Tales of Sustainable Forestry*, which won the Southern Environmental Law Center's Reed Memorial Award. She recently installed a solar photovoltaic system that makes 90 percent of her household electricity. This commentary, written by Bolgiano, was distributed by Bay Journal News Service, September 2008.*

Course celebrates 40 years of horticulture education

The 2009 Mid-Atlantic Horticulture Short Course will celebrate 40 years of horticulture education at its annual conference January 25-30 at the Founder's Inn and Spa in Virginia Beach. Known as one of the nation's most comprehensive horticulture educational programs, it features more than 90 professional horticulture and business speakers and a choice of more than 140 sessions related to the horticulture and landscape management industry.

The five-day conference is divided into industry-specific tracks. Participants can select any track or mix and

match subject areas: national and regional speakers present new techniques, university research and advances in Arboriculture, Business and Management, Crew Manager Training, Horticulture Skills, Landscape Management, Landscape Architecture and Design and Plants and Production.

Featured speakers include Dr. Jerzy Nowak, Virginia Tech Center for Peace Studies & Violence Prevention; The Honorable W. Tayloe Murphy, Jr., former Virginia Secretary of Natural Resources & House of Delegates; Dr. Brian Kane, University of Massachusetts; Dr.

Bernie Erven, Ohio State University, Professor Emeritus, Dr. Chris Martin, Arizona State University, Buddy Lee, nationally-known plant breeder and creator of the Encore Azalea® and Dr. Bob Lyons, University of Delaware, Longwood Gardens. Robert Hayter, ASLA, with the Hayter Firm, will conduct his special management workshop on Optimum Provision ManagementSM.

The Mid-Atlantic Horticulture Short Course programs and registration forms are available at www.mahsc.org. For more information call 757-523-4734 or email info@mahsc.org.

•Flora Project

(Continued from page 3)

of Virginia Project in honor of someone special in your life. Gifts of \$1,000 or more will be listed, by support level, in the *Flora*, and if made in honor of someone, that person's name will also be included in the listing. Notice of your gift will be sent to the person whom you are honoring (or to the family, if it is a memorial gift). Then, in 2012, upon publication, you will receive a copy of the first edition of the *Flora of Virginia*, or you may opt to have it sent to the person or family you are honoring.

Gifts of \$1,000 to \$9,999 will be

listed at the level of Virginia Bluebell (*Mertensia virginica*). For a complete list of support levels, please visit the website of the Flora of Virginia Project, floraofvirginia.org. Gifts may be pledged and the pledge paid progressively, as it suits you.

If you are a new member, you might like to read what a flora is and how it will be used. For that and more information, also visit the Flora Project website. And check back regularly, because a redesigned website will be launched soon. There will be exciting information about the authors and many people working on the Flora project.

To provide financial support to this project, please make your check out to the **Foundation of the Flora of Virginia Project Inc.** and send it to: The Foundation of the Flora of Virginia Project, Inc., P.O. Box 512, Richmond, VA 23218-0512. All donations are fully tax-deductible and will be acknowledged by letter, a copy of which should be kept for tax records. Please indicate if you would like your gift to remain anonymous. To give a donation in the form of securities, please call Chris Ludwig at 804-371-6206.

Nicky Staunton, Member, Flora of Virginia Project Board of Directors

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•Climate change

(Continued from page 1)

coastal plain. An important goal will be to increase habitat connectivity.

Preston Bryant, the Chairman of the Virginia Commission on Climate Change and Virginia's Secretary of Natural Resources, said that the commission has been intensively gathering information from experts to determine the impacts on resources, the economy, and the public. Carbon dioxide emissions rose in Virginia by approximately 34 percent from 1990 to 2004, nearly twice the national average. The goal is to reduce greenhouse gas emissions by 30 percent by 2025. But at the same time the population of Virginia is expected to continue to increase by about 3 million. And our lifestyle choices are energy intensive—e.g. plasma televisions use much power; text messaging requires huge server farms.

But the outlook is not all gloom and doom. Venture capitalists are putting money into solar and wind projects. The commission will be looking at possibilities for sequestration and adaptation to address climate change issues. It will submit its report to the Governor by December 15, 2008.

John Kostyack of NWF described federal legislation to create a national cap-and-trade system for greenhouse

gas emissions. Some versions of the legislation would establish a Climate Adaptation Fund to address climate impacts on coastal areas, natural resources, fish and wildlife, and ecosystems. However, he conceded that no consensus exists on what adaptation would look like. Having a source of funds to help with habitat acquisition and management would be important.

Finally, Mark Humpert, of the Association of Fish and Game Agencies, discussed what other states are doing to assess vulnerability of species.

Participants then spent the afternoon in group discussions on concerns about climate change, anticipated consequences from it, and recommendations on what actions are needed to mitigate its impact.

Based on those discussion sessions, a team from NWF, DGIF, and VCN will work to develop draft strategies and actions that Virginia needs to take to adapt management, planning, and conservation efforts to protect its fish and wildlife from climate change. They will use the draft actions and strategies as the basis for a second workshop in March of 2009. VNPS will be invited. Meanwhile, we will look forward with interest to the report of the Commission on Climate Change.

Mary Ann Lawler, VNPS Conservation Chair

•Gifts

(Continued from page 5)

Field guide takes you on an incredible journey to a land that time has forgotten. Wiggins has worked for over 13 years to document, study, advocate and protect over 1,800 acres of a unique peninsula in Stafford County, Virginia, that is surrounded by a freshwater, tidal estuary. This is a history of Crow's Nest from its beginnings millions of years ago through Colonial America, the Civil War and the efforts to save it today.

REMARKABLE TREES of VIRGINIA by Nancy Ross Hugo and Jeffrey Kirwan; Robert Llewelyn, photographer, University of Virginia Press & Albemarle Books, \$39.95. (See page 4)

VNPS T-SHIRT with wildflower artwork of Anita Cooper, Shenandoah Chapter \$18 per shirt (\$15 + \$3 shipping/handling), available in forest green, mulberry purple and mocha brown, small choices limited to 5 green, 9 purple and 1 brown, 8 brown medium. Medium, large and extra large available in all colors.

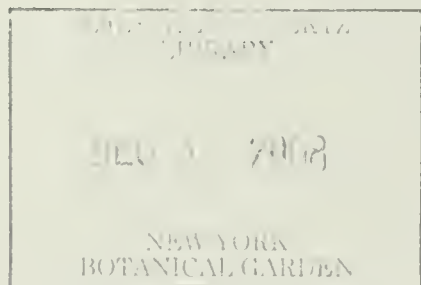
VNPS NOTE PADS with Anita Cooper's colorful wildflower artwork (same as T-shirt), 4"x5", \$4 per pad (\$1.50 + .50 shipping/handling per pad) or 3 for \$10 plus shipping/handling. The T-shirt and note pad can be viewed at www.vnps.org.

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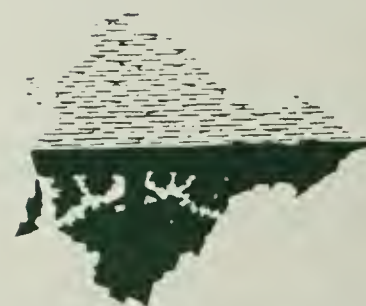
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